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US Army Corps of Engineers
New Orleans District

HISTORICAL RESEARCH AND ARCHEOLOGICAL RECONNAISSANCE OF THE MANDEVILLE SEAWALL REPLACEMENT, ST. TAMMANY PARISH, LOUISIANA

Final Report

January 1994

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The study reported in this volume focused on the beachfront area (south of Lakeshore Drive) between West Beach Parkway and Bayou Castine, an area of approximately 44.5 acres.

Seven backhoe trenches were excavated. Only a few artifacts were recovered, and most of these were non-diagnostic. Two of the trenches were placed at the suspected location of a portion of the 1895 wooden seawall. These trenches indicated that the seawall is in an advanced state of deterioration. The results of this study indicate that proposed construction will not impact significant archeological resources.

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DEPARTMENT OF THE ARMY
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REPLY TO
ATTENTION OF

October 20, 1993

Planning Division
Environmental Analysis Branch

To The Reader:

This cultural resources effort was designed, funded, and guided by this office as part of ou. cultural resources management program. Documented in this report is historical research and archeological fieldwork for the proposed replacement of the Mandeville Seawall. The purpose of this research was to determine if significant archeological resources are located in the project's impact area.

We concur with the contractor's conclusion that the project will not affect significant archeological deposits.

Michael E. Stout
Technical Representative

R. H. Schroeder, Jr.
Chief, Planning Division

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CHAPTER 1
INTRODUCTION

The purpose of this study was to determine whether significant archeological resources are located within the potential impact area of the proposed replacement of the Mandeville Seawall (Figure 1). The history of seawall construction at Mandeville is summarized in Chapter 5.

The following information concerning the nature of the proposed construction is derived from Attachment 1 of the Scope of Services:

> The preliminary plan is to replace the existing seawall with a corrosion resistant steel sheetpile wall with a reinforced concrete cap... The replacement wall will generally follow the alignment of the existing wall with some deviations to the lakeside or landside to miss stone and debris along the seawall. The replacement wall will be backfilled with coarse material, like crushed limestone, placed on filter cloth and topped with a layer of soil suitable to grow grass. City drain pipes intersecting the wall will be passed through water-tight sleeves. As presently conceived, the sheetpiling will be driven and the cap poured from the landside of the wall... The replacement wall will start where the existing seawall starts and end where the existing ends; therefore the replacement will be about 8,000 feet long.

The seawall protects the historic town of Mandeville, LA (Scope of Services). Historical research, surface reconnaissance, and excavation of a series of backhoe trenches were methods used for the study.

Figure 1. Excerpt from the 1969 Covington, LA 15' quadrangle showing the study area.

CHAPTER 2
NATURAL SETTING

Geographic Setting

The project area is located in St. Tammany Parish along the lakefront of the town of Mandeville (Figure 1). The parcel of land extends westward from the west bank of Bayou Castine for a distance of approximately 1.5 miles. It is bordered on the north by Lakeshore Drive, and on the south and west by a concrete seawall which runs along Lake Pontchartrain.

Geomorphology

The study area is situated on the Pleistocene Prairie terrace within the Pontchartrain Basin. The terrace was formed by sedimentation during one of the Pleistocene interglacial periods. Sea level began to fall during the early part of the Late Wisconsin glacial stage. At this time, rivers and streams eroded trenches as a result of the falling sea level. Subsequent to these events, sea level rose to its present stand. Lake Pontchartrain was then formed through the process of embayment associated with Mississippi River deltaic lobes (Saucier 1963:4, 42). Saucier (1963) provides a detailed discussion of the processes and chronology that led to the present-day configuration of the Lake Pontchartrain shoreline.

Figure 2 is a map of that portion of Mandeville fronting on Lake Pontchartrain. It shows the locations of borings conducted by the New Orleans District in 1981. Figure 3 is a cross-section based on those borings, also provided by the New Orleans District. It shows that recent alluvium extends from the surface to an approximate depth ranging from 1.25 to 17.5 feet. Beneath this are Pleistocene Terrace deposits which extend to the base of the borings (-34 to -36 feet NGVD). The recent alluvium consists of a variety of soil types: clay, sand, and silt. Pleistocene deposits consist of a fat clay overlying silty sands.

Based on the data discussed in the above paragraph, the following expectations were derived. In Trench 1 it was anticipated that the upper surface of the Pleistocene would be buried beneath five feet of recent alluvium. Eleven feet of recent alluvium were anticipated at the location of Trench 2, 15 feet at Trench 3, and approximately 17.5 feet at Trenches 4, 6, and 7.

Climate

The entire Pontchartrain Basin is characterized by a humid, subtropical climate. Throughout St. Tammany Parish, the average winter temperature is 53° F with an average daily minimum of 41° F. The average summer temperature is 80° F with an average daily maximum of 91° F. The average precipitation is 61 inches per year. Precipitation may be increased by the occasional tropical storms that affect the area (USDA 1990:1-2).

Flora and Fauna

St. Tammany Parish was once covered by virgin forests. These have all been felled by the commercial timber industry. Documented species include loblolly pine, slash pine, longleaf pine, shortleaf pine, sweetgum, water oak, southern red oak, white oak, post oak, cherrybark oak, Nutall oak, willow oak, American sycamore, magnolia, eastern cottonwood, green ash, typelo gum, sweetgum, black cherry, elm, red maple, and baldcypress (USDA 1990:43).

Areas where pines predominate are suitable habitats for white-tailed deer, squirrels, rabbits, and wild turkey. Low-lying swamps with cypress and water tupelo provide excellent habitats for wood ducks, wading birds, reptiles, and amphibians. Open areas, which prior to the timbering industry were uncommon, support bobwhite quail, mourning dove, and rabbit. Marshes, which are found mainly in the southern portion of St. Tammany Parish, support furbearers such as the muskrat, waterfowl, fish, and crustaceans. Streams throughout the parish contain a variety of fish species (USDA 1990:46-47). The faunal diversity of the area, which is associated with different habitats and different elevations, made St. Tammany Parish an attractive locale for human habitation as is evidenced by a relatively high density of prehistoric archeological sites.

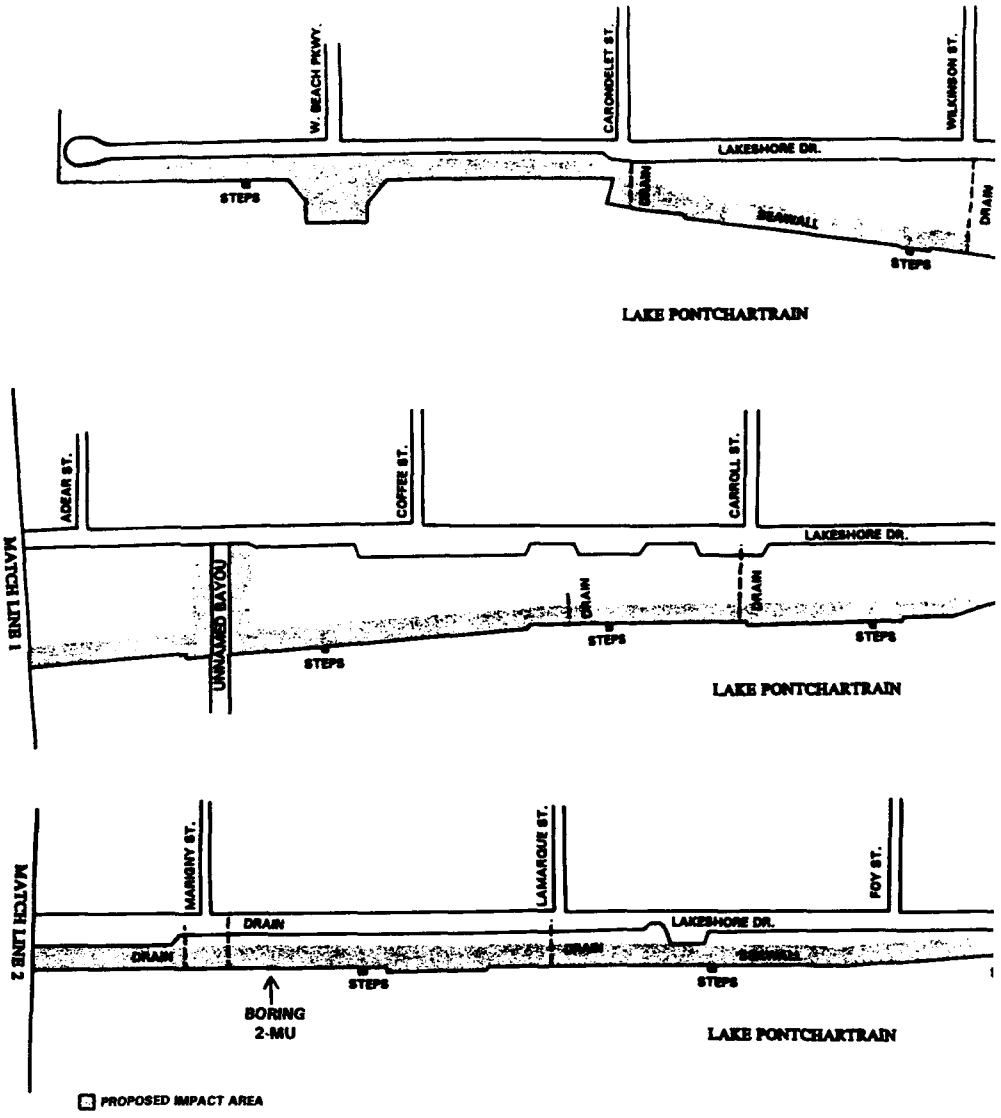

Figure 2. Excerpt from "Design Memorandum
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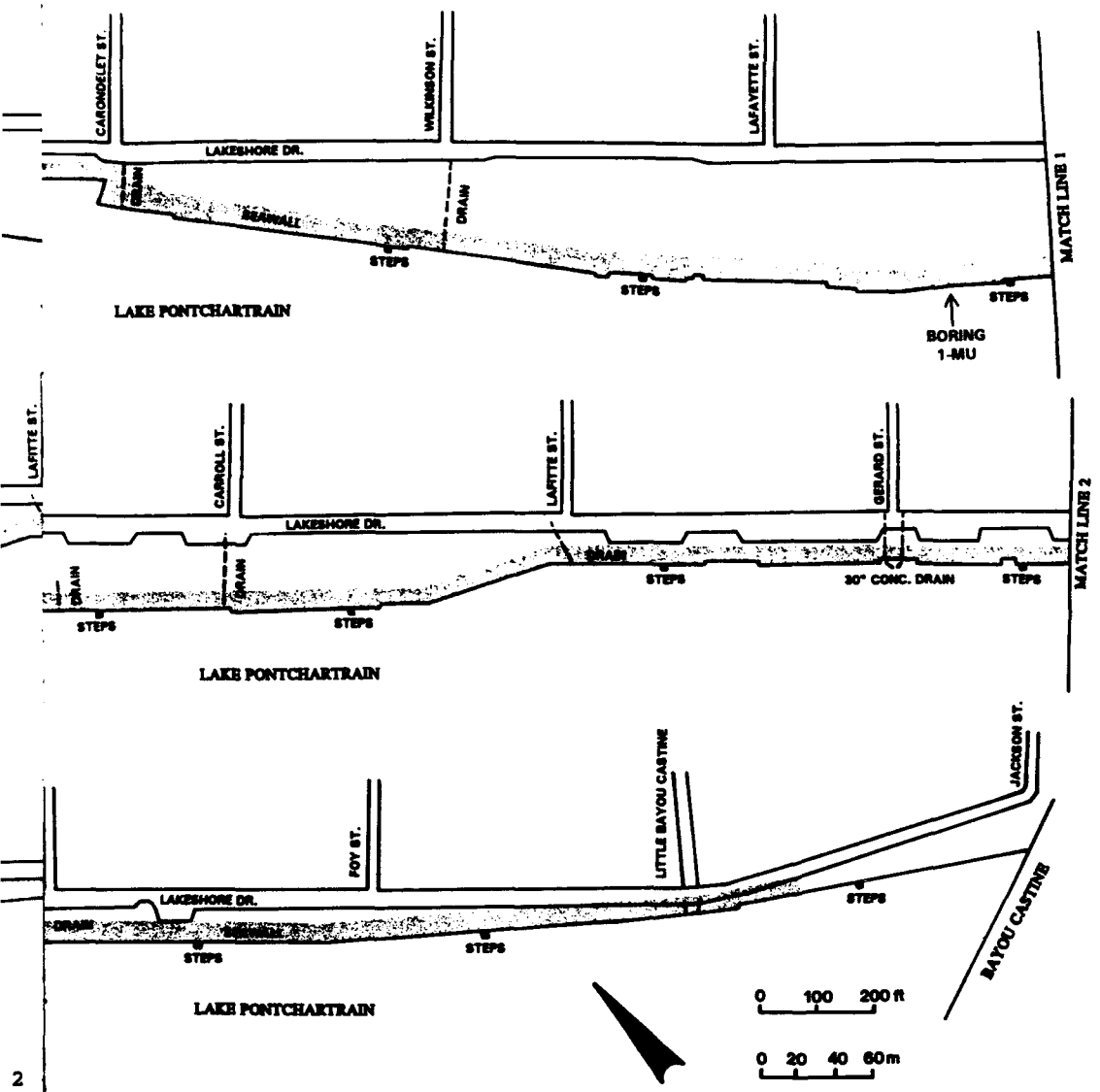

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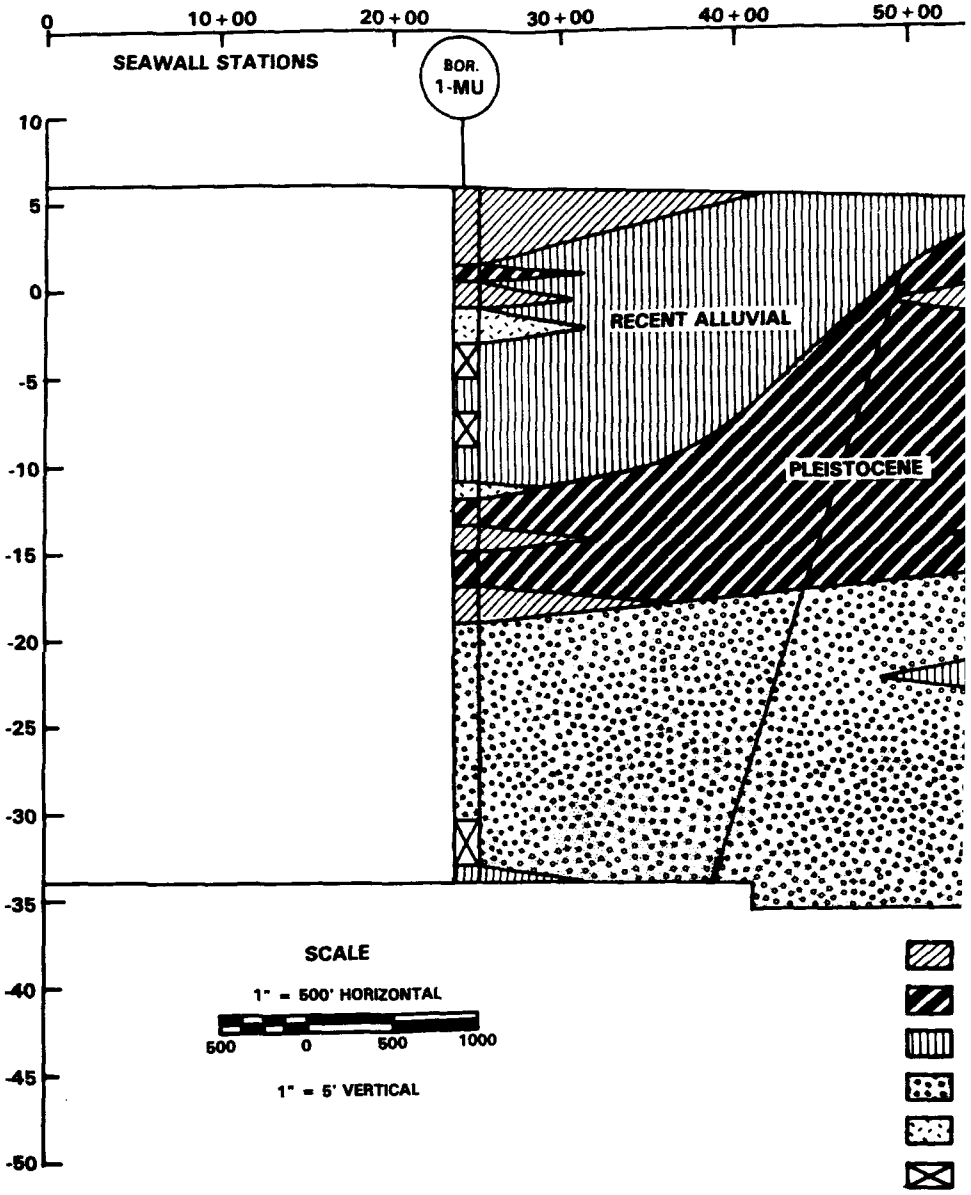

Figure 3. Mandeville Seawall Geologic S
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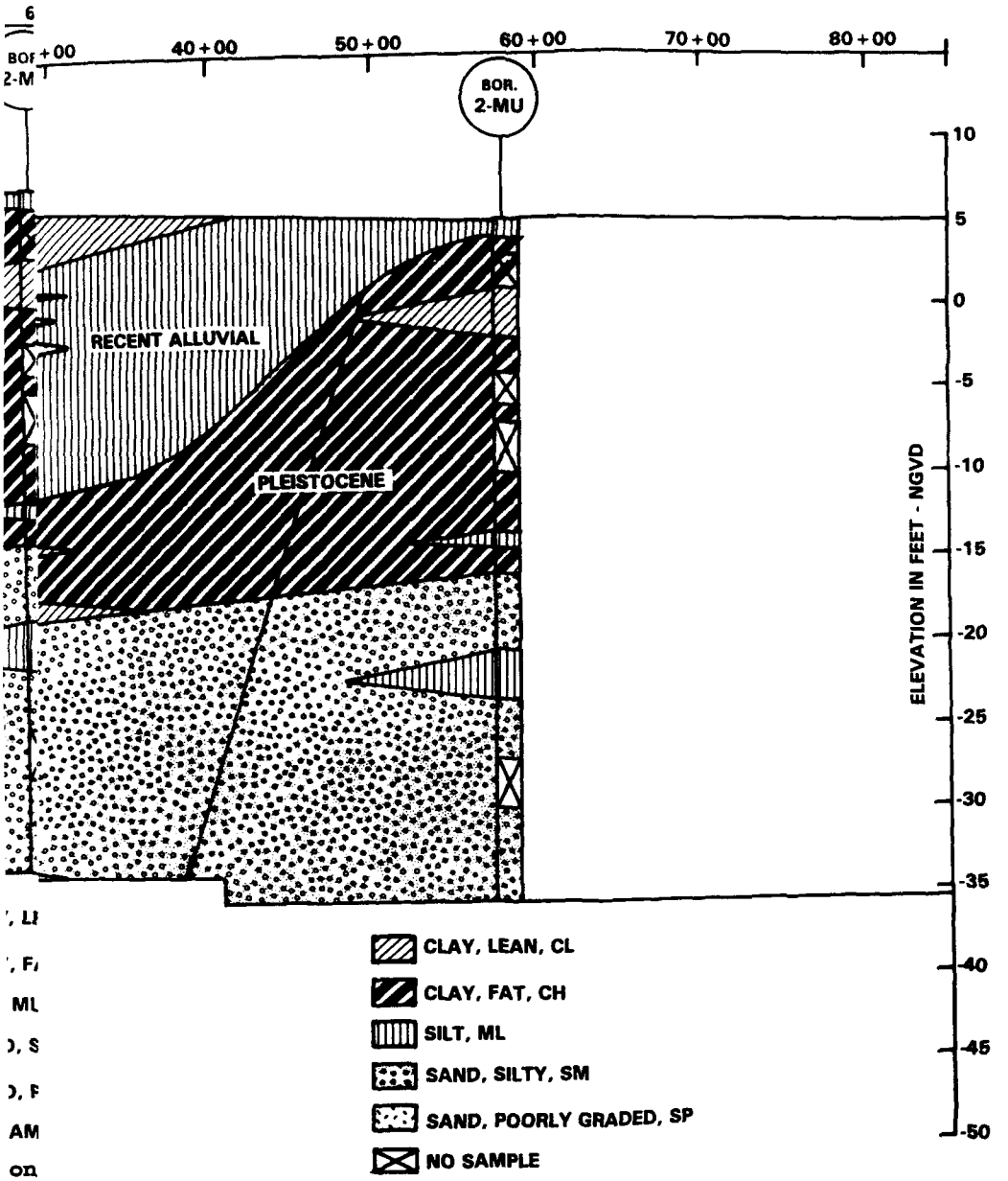


ndeville Seawall Geologic Section dated 1981.
he U.S. Army Corps of Engineers, New Orleans

CHAPTER 3
PREVIOUS INVESTIGATIONS

No previous archeological research has been done in the immediate vicinity of the Mandeville lakefront. However, investigations have been conducted in areas adjacent to the town of Mandeville and within the outlying area. The first archeological studies conducted on the north shore of Lake Pontchartrain were by the Smithsonian Institution in the early twentieth century when field investigations were conducted by Bushnell (1909, 1922), Collins (1927), and Fowke (1928). Further studies have been conducted by Ford (1936, 1939); Ford and Quimby (1945); Gagliano, Weinstein, and Burden (1975); Neuman (1975); Shenkel (1975, 1976); Atkinson (1976); Nichols (1978); Gagliano, Fulgham, and Rader (1979); Rivet (1979); Gagliano (1980); Heartfield, Price, and Greene (1982); Beavers et al. (1982, 1984), Thigpen and Pearson (1984); Poplin (1987); Guevin, Weinstein, and Duay (1988); Jones and Shuman (1988); and Shannon (1989).

The sites along or near the north shore of Lake Pontchartrain which are most pertinent to the study area are 16ST1, 16ST26, 16ST48, 16ST68, and 16ST86. The Tchefuncte type site (16ST1) is located within Fountainbleau State Park (once called Tchefuncte State Park). The site consisted of two elongated *Rangia cuneata* shell middens (Midden A and Midden B). Midden B was excavated in 1939 under the supervision of Clarence L. Johnson, and both middens were excavated in 1941 as part of an LSU-WPA project directed by Edwin B. Doran, Jr. Both middens contained major Tchefuncte components. Midden A yielded a number of stone, bone, shell, and ceramic objects as well as almost fifty thousand sherds and forty-three human burials (Neuman 1984:115-116). Further investigations were conducted by Ford and Quimby in 1945 and by Saucier in 1952 (Louisiana State Site Form).

There are three sites located on Bayou Castine which is east of the study area. Two of the sites (16ST26 and 16ST48) are referred to as the Bayou Castine site and the third (16ST68) is called the Johnson site. In 1975, these sites were identified as three separate *Rangia cuneata* shell middens by Neuman during an aerial survey.

The site nearest to the study area is the Bayou Castine site (16ST26). It was located on the east side of the mouth of Bayou Castine and first recorded, in 1958, by Saucier and Gagliano. The description of material present included *Rangia cuneata* shell, sand, and artifacts accumulated by wave action. In 1976, Shenkel reported that this site had been destroyed by dredging activity (Shannon 1989:46).

Site 16ST48, also referred to as the Bayou Castine site, consists of four shell middens along the banks of Bayou Castine. Surface collections recovered by Shenkel in 1976 included pottery associated with the Coles Creek and Plaquemine Cultures (Shannon 1989:47).

Site 16ST68 is also along Bayou Castine near LA Hwy. 190 on the present-day site of the Northlake Museum and Nature Center. This site has been referred to as the Johnson site, Picard's Fiddle, and the Bok Fuca site. The site was recorded by Neuman in 1975. Prior to this, only amateur excavations and surface collections were conducted. During a cultural resource survey for the Northlake Museum and Nature Center, Shannon (1989) conducted a more thorough investigation of the site, presuming that it was once part of an Acolapissa village or hamlet as described by Penicaut in 1707 (Chapter 5). The two prehistoric components present in the shell midden were Tchefuncte and Mississippian. No evidence of the Acolapissa village was found (Shannon 1989:54, 110-112).

Site 16ST86 is the historic site of Fountainbleau Plantation built ca. 1820 by Bernard P. de Marigny de Mandeville (Chapter 5). In 1989, investigations were conducted at this site. These consisted of a pedestrian survey and subsurface test excavations by the Louisiana Archeological Society under the direction of Dr. Dave Davis of Tulane University. A Louisiana Site Record Update Form was submitted stating the remaining cultural features as being the ruins of the sugarmill and several outbuildings, some subsurface foundations, and the main house's "Oak Alley."

CHAPTER 4
ABORIGINAL OCCUPATIONS IN SOUTHEASTERN LOUISIANA

Prehistoric occupations in southeastern Louisiana are generally divided into eight periods. These are the Paleo-Indian, Archaic, Poverty Point, Tchula, Marksville, Baytown, Coles Creek, and Mississippi Periods. The following discussion provides a brief overview of these periods and their affiliated cultures. The Paleo-Indian Period is not included because no sites representing this period have been reported in St. Tammany Parish.

The Archaic Period

Few sites dated to the Archaic Period have been reported in southeastern Louisiana. Because land formation was occurring during this time, sites are probably either deeply buried or in some cases reworked by riverine activity. From 5000 B.C. to 2000 B.C., the altithermal period occurred causing drastic climatic changes. Environmental conditions became warmer and drier, causing changes in the floral and faunal communities and a rise in sea level. With these ecological changes, the early inhabitants of Louisiana adapted to a subsistence strategy based on a wide variety of woodland and riverine environments. This shift in environmental adaptation has been referred to as "primary forest efficiency" (Neuman 1984:74-76; Shannon 1989:16).

The Archaic period is characterized by the introduction of a wide variety of unfluted, large, heavy projectile points with stems and side notches and the atlatl or spear thrower. Further, the tool assemblage includes knives, scrapers, drills, gravers, groundstone celts, hammerstones, grooved axes, large chipped-stone choppers, plummets, gorgets, stone pipes, mortars, pestles, and mealing stones. Raw materials, including shell, bone, and copper were also used for the production of tools and personal adornment. The wide variety in the artifact assemblage of the Archaic period suggests maximum utilization of available resources for local adaptation to the environment (Neuman 1984:77-85).

The Poverty Point Period

The name "Poverty Point" is derived from the type site (16WC5), an area of massive earthwork construction, in northeastern Louisiana. This site is believed to have been a cultural center with trade networks and influence extending throughout the Lower Mississippi Valley. Baked clay balls known as "Poverty Point objects" are one of the important traits that mark the period. Other traits include

an elaborate lapidary and microlithic industry, use of steatite vessels, and the use of exotic stone (Thomas 1982:5).

The Tchula Period

Tchula period occupations in the Lower Mississippi Valley are associated with the Tchefuncte culture, dating from 500 B.C. to A.D. 200 (Neuman 1984:113-136). The period has been called "the early ceramic period" because, with the exception of fiber-tempered pottery, it was the interval during which initial pottery complexes appeared in the Lower Mississippi Valley. Sites are few and scattered, and there are no universal markers. However, within subareas such as South Louisiana, regional markers, primarily Tchefuncte type ceramics, have been identified (Phillips 1970: 7, 8, 15, 76). The Tchefuncte type site (16ST1) is located east of the study area in Fountainbleau State Park.

Peoples of the Tchefuncte culture were the first to engage extensively in the manufacture of ceramics. Fiber-tempered and some grog-tempered or temperless sherds have been recovered from earlier Poverty Point contexts. These may represent primarily trade goods from the earliest pottery-making cultures to the east. The basic Tchefuncte ware is temperless or grog-tempered, with accidental inclusions of small quantities of sand and vegetable fiber. Sand-tempered wares represent a minority constituent of Tchefuncte site assemblages (Shenkel 1984:47-48).

The Marksville Period

The Marksville period is associated with a Hopewellian culture and tradition manifested throughout the Lower Mississippi Valley (Phillips 1970:7, 17-18, 886). The Hopewell culture's two major centers of development were in Ohio and Illinois, and date to between 200 B.C. and A.D. 400. Diffusion of aspects of the culture may have resulted from the activity of traders who established a wide-ranging network, sometimes termed the "Hopewellian Interaction Sphere."

In addition to diagnostic pottery types of the Marksville period, conical burial mounds were characteristic of the culture. Interments are generally associated with grave goods. Some of these were manufactured from exotic raw materials (Neuman 1984:142-168).

The Baytown Period

The Baytown period has been defined as the interval between the end of Hopewellian/Marksville culture and the emergence of Coles Creek culture. In the southern half of the Lower Mississippi Valley, there are no area-wide horizon or period markers (Phillips 1970:901).

The Baytown period is sometimes referred to as the "Troyville period" by archeologists in Louisiana. Because of the lack of diagnostic markers for the period in southeastern Louisiana, it is often combined with the subsequent Coles Creek period, and the two are together referred to and discussed as "Troyville/Coles Creek cultures" (e.g. Neuman 1984).

The Coles Creek Period

The Coles Creek period is the interval that begins with the emergence of Coles Creek culture in the southern part of the Lower Mississippi Valley and ends with the establishment of "full-blown" Mississippian culture in the northern part of the Valley (Phillips 1970:18). Although it appears to represent a population zenith in the eastern delta province, many sites tentatively classified as Coles Creek may actually be from the Baytown period (Wiseman et al. 1981:3/5).

Coles Creek culture was characterized by small ceremonial centers with mounds. These were surrounded by villages of varying size. The culture developed in the area between the mouth of the Red River and the southern part of the Yazoo Basin. Its influence filtered into southeastern Louisiana (Brown 1984:95).

Mounds associated with the Coles Creek culture generally are larger and exhibit more construction stages than those associated with the earlier Marksville culture. A more significant difference is that Coles Creek mounds are pyramidal and flat-topped, and they were used as substructures for religious and/or civic buildings (Neuman 1984:167).

The Mississippi Period

The beginning of the Mississippi period is marked by the emergence of Mississippian culture in the northern part of the Lower Mississippi Valley and Plaquemine culture in the southern part (Phillips 1970:18-19). The Plaquemine culture itself is sometimes considered to be the classic development of temple mound construction in the lower

portion of the Lower Mississippi Valley. However, archeological excavations suggest that it actually represents the culmination of developments of the preceding Coles Creek culture. Multi-mound construction and artifact assemblages are evidence that link the two. Absence of European trade goods indicates that the Plaquemine culture reached its zenith prior to contact (Neuman 1984:258-259). Sites dated to the period of contact represent a Delta-Natchezan phase. Proportions of ceramic types change, some new styles and types appear, and European trade goods are often found in association with the aboriginal materials (Quimby 1957:118-119, 134-144).

Aboriginal Occupation during the Colonial Period

Identities and locations of Indian tribes in Louisiana cannot be determined for any period prior to about 1700 when literate French settlers and visitors began to record their observations regarding aboriginal occupants of the area. Despite these accounts, it remains difficult to sort pre- and post-contact culture traits. This is especially true for the lesser tribes living along the Mississippi River and other areas within southeastern Louisiana (Kniffen et al. 1987:45). Occupation of the north shore by the Acolopissa is described in detail in Chapter 5.

The protohistoric and early historic periods were traumatic for aboriginal society in southeastern Louisiana. The effects of disease and of the ever-increasing European population are reflected in the declining aboriginal population and in the migrations by remnants of various tribes. Internecine warfare typified relations between the various groups (Giardino 1984).

CHAPTER 5
HISTORY OF THE STUDY AREA

The first claim on St. Tammany Parish was made by the Spanish in 1543 as a result of DeSoto's expedition on the lower 500 miles of the Mississippi River. The area remained undisturbed and of little interest to Europeans until a garrison was placed in Pensacola Bay by the Spanish in 1698. In 1682, Rene Robert Cavalier, Sieur de LaSalle, claimed for France all territory drained by the Mississippi River. This territory was referred to as Louisiana. An unsuccessful attempt was made by the French in 1684 to establish a colony at the mouth of the Mississippi River. This effort resulted in the murder of LaSalle (Ellis 1981:5-6).

In 1698, Iberville resumed LaSalle's effort to establish a French colony. In 1699, he explored the islands of the Mississippi Sound and eventually entered the mouth of the Mississippi River. He sailed upstream encountering a number of Indian tribes, including the Mougoulacha, Bayougoula, and Houmas. During his return, the chief of the Bayougoulas showed Iberville a stream called Ascantia which headed a passageway back to Ship Island. This passageway, which is known today as Bayou Manchac, the Amite River, Lake Maurepas, and Pass Manchac, was referred to at that time as the Iberville River. On March 27, 1699, Iberville arrived and camped at "a lake, the shore of which runs west-southwest, which we have named Pontchartrain" (Ellis 1981:9-10). It is believed that the campsite was at a prominent point known as Goose Point which is located about 30 miles from Manchac and about 12 miles from the Rigolets. Thus, Iberville and his party were the first known Europeans to set foot on the north shore in the area known today as St. Tammany Parish.

In May of 1699, Bienville, Iberville's younger brother, led an expedition to find an Acolopissa village in hopes of establishing trade relationships and gaining control of the south shore of Lake Pontchartrain. This area was of major interest to the Europeans because it could be used as an alternative route from the Mississippi River to the Gulf of Mexico (Shannon 1989:28). Bienville was received cautiously by the Acolopissas who were living on the Pearl River about eleven miles upstream and west of the Pearl River on the north shore along major rivers which drain into Lake Pontchartrain (Swanton 1946:82; Shannon 1989:28).

In 1702 (or 1705), the Acolopissas moved to a bayou called "Castembayouque". It is now called Bayou Castine and flows through the present-day town of Mandeville (Ellis 1981:21; Swanton 1946:82). In 1705, the Natchitoches

Indians were sent by the French (Juchereau St. Denis) to live with the Acolopissa because of crop failure. The warriors of the two tribes served as allies to the French in a raid on the Chitimachas along Bayou Lafourche (Ellis 1981:21).

From May of 1706 until February of 1707, Andre Penicaut and eleven of his men were sent by Bienville to live with the Acolopissa and Natchitoches because of a shortage of supplies. Penicaut describes the living conditions of the village in the following excerpt (McWilliams 1988:106-113):

> A week later we reached the Colapissas and the Nassitoches. That day we brought a great deal of game in our boats, having killed it the same day near the spot where we had spent the night. As we had no more than two leagues to travel between our last stop and the Colapissas, we had hunted from morning till four in the afternoon, with the intention of carrying game to our hosts as an arriving present. And so in our boats there were six deer, eight turkeys, and as many bustards, killed that same day. When we got to their village with all this, they embraced us, the men as well as the women and girls, all being delighted to see us come to stay with them. Then they started cooking the meats that we had brought. And after supper the entire village began to dance, and danced far into the night.
>
> We had in our group a companion named Picard, who had brought a violin with him. He could play it well enough to have these savages do some figure-dancing in step. They had us nearly dying of laughter, for the musical instrument had the whole village drawn up around Picard; it was the most comical sight in the world to see them open their eyes in amazement and every now and then cut the most comical capers ever seen. But it was quite another matter when they saw us dance a minuet - two boys dancing together. They would gladly have spent the whole night watching us and listening to the violin, had not the Chief of the Colapissas, fearing we were tired out, come to tell us that lodgings were assigned to us. All of them wanted to have us in their homes: the Chief of the Colapissas reserved the violin player to lodge with him; the most important men gave lodging to the others. For my part, I was lodged with the Chief of the Nassitoches. On my arrival, he had invited me to stay with him, and he led me away.

I was the person that, acting for M. de St. Denis, had conducted this chief among the Colapissas the year before to live there with them. I knew him as one of the most honorable men among the savages of the region. Since that time, he had been indebted to me for saving his life, as I shall show later on.

I was not sorry that I was lodged with him, for in his house I received every possible favor. He had two daughters that were the most beautiful of all the savage girls in this district. The older one was twenty; she was called Oulchogonime, which in their language means the good daughter. The second was only eighteen, but was taller than her older sister. She was named Ouilchil, which means the pretty spinner.

I got up a bit late next morning because we had tired ourselves by dancing the greater part of the night. On getting up, I was surprised to see my host bring in a great platter of fish fricasseed in bear fat, and cooked very well. There was also some sagamite, which is a kind of bread that they make from cornmeal mixed with flour of little beans that are similar to our haricots in France. Just the two of us were to eat together, and I was surprised at not seeing his wife or his daughters; but half an hour later they came back together, bringing a big platter of strawberries, for as early as the first of May strawberries abound in the woods. That day they put on their fine *braguets* of very white nettle-linen. I gave each of them a present of half an ell of brocade of white background woven with little flowers colored pink and green, out of which each could make a *braguets;* but their father did not approve and begged me to keep this material for the daughter of the Grand Chief of the Colapissas because that chief outranked all others in their settlement. He was absolutely determined that the younger daughter should give her piece of brocade back to me; but when I showed him another piece I was saving for that purpose, he thanked me at great length and was beside himself with politeness, and the mother was, too.

At this time two of my comrades came in to see me, one of them being Picard, the violin player. As soon as my host's elder daughter saw him, she kissed him. I was not so sorry about this as I

would have been if it had been the younger daughter kissing him. Picard ate a bit of fish with us; and, when my other comrades arrived unexpectedly, we all went together to the house of the Grand Chief of the Colapissas. When we got there, I embraced his daughter and also gave her a present of half an ell of the same material that I had given the daughters of the Chief of the Nassitoches, at whose house I was staying. I think the father and mother would gladly have given me all their possessions, they were so delighted with the present I had given their daughter. We then went into all the huts of the savages, one after the other, they vying with one another in entertaining us.

Afterwards, during the after-dinner hour, we went to see their methods of fishing. They pulled up their nets from the lake filled with fish of all sizes. These nets, actually, are no more than fishing lines about six fathoms long. All along these lines, numerous other little lines are tied a foot apart. At the end of each line is a fish hook on which they put a bit of sagamite dough or a small piece of meat. With this method they do not fail to catch fish weighing more than fifteen or twenty pounds. The end of the line is tied to their boats. They pull the lines up two or three times a day, and they always catch many fish when they do. Such fishing as this does not keep them from working in their field, for it can be attended to in less than half an hour. When they have pulled in all their fish, each person takes some fish home, and after it is cooked and seasoned with bear fat, as I have already said, they begin to eat it, each in front of his door in the shade of peach trees.

When the sun had sunk low and all had eaten supper, we danced, as on the evening before, quite far into the night. Their dances, like the ones I spoke of in the article on the Natchez, are conducted to the sound of a little drum. Our musician endeavored to keep time with the drum and the singers' voices. Although he made a most painful attempt that drew upon all his skill and caused us all to laugh out loud, he never was able to approximate their rhythm; and, as a matter of fact, their singing is more savage than the savages themselves. Although it is an incessant repetition, Picard could not get their pitch; but

he made amends by teaching many of the girls in the village to dance the minuet and la *bourree*.

Every day after dinner, which these savages usually have at eight o'clock in the morning, we would get together and then go hunting, and every day we would bring game back to the village, so that the savages were delighted to have us with them.

The Nassitoches are handsomer and have better figures than the Colapissas, because the Colapissas' bodies, men's and women's, are all tattooed. They prick almost their entire bodies with needles and rub the pricks with willow ash crushed quite fine, which causes no inflammation of the punctures. The arms and faces of the Colapissas women and girls are tattooed in this way, which disfigures them hideously; but the Nassitoches, men as well as women and girls, make no use of such punctures, which they loathe. That is why they are so much better looking; besides, they are naturally whiter.

As for their religion, they have a round temple before which they appear morning and evening rubbing their bodies with white mud and lifting their arms on high; they mutter some words very low for a quarter of an hour. At the portal of the temple there are some wooden likenesses of birds; within the temple are numerous little idols, of both wood and stone, representing dragons, snakes, and some toadlike creatures, which they keep locked up in three chests inside the temple, the key being held by the Grand Chief.

When a savage dies, a kind of grave is prepared, or, rather, a platform raised two feet above ground, on top of which the dead man is placed. He is covered completely with mud, and, further, bark is put on top of that, for fear of animals or birds of prey; and down below is put a little jug filled with water together with a platter full of meal. Every morning and every evening fire is lighted beside the platform, and here they come and weep. The richest people hire women to weep beside the platform. After six moons, the body is uncovered; if the flesh is consumed, the bones are put in a little basket and carried to their temple; if it is not yet consumed, the bones are taken from the flesh, and the flesh is burned.

They are rather cleanly with their food: they have an individual pot for each thing that they cook - that is, the meat pot is never used for fish. They cook all their food with bear fat, which is white in winter, when it is congealed, like lard, and is like olive oil in summer. It does not have a bad taste. They eat it with salad, use it in making pastry, in frying, and usually in everything they cook.

As for fruits, they happen to be few. They have, however, peaches in season that are even bigger than those in France, and sweeter; strawberries; plums; and a grape that is a bit sour and not so big as the grapes of France. There are also nuts which they pound into flour, using it with water to make pap for their children and mixing it with corn meal to make sagamite, or bread.

These savages have no hair on them whatever except the hair on their heads. The men as well as the women and girls remove the hair from their faces as well as from other parts of the body; they remove hair with shell ash and hot water as one would remove the hair from a suckling pig.

They have an unusual way to light a fire. They take a small piece of cedar wood, the size of one's finger, and another small piece of mulberry wood, which is very hard. They put them side by side between their hands and by spinning them together, like making chocolate froth, they make a little piece of fuzz come out of the cedar wood and catch fire. This can be done instantly.

When they go hunting, they go dressed in deer skins with the antlers attached. They make the same motions that a deer makes; and when the deer notices this, he charges them; and when he gets in good musket range, they shoot at him and kill him. With this method they kill a great many deer; and it should be acknowledged that in hunting buffalo as well as bear and deer they are more skilful than the French.

When winter came, we went out to the channel and into the woods to kill bustards, ducks, and wild geese that are much bigger than the geese in France. During that season unbelievable numbers of them are attracted to Lake Pontchartrain, and there they stay along the lake shore. Every day

> we brought back some of them, which we roasted inside the huts, where good fires were kept burning on account of the cold. The cold is not, however, so long or so severe as in the Upper Missicipy.
>
> In this way we spent the greater part of the winter. As far as I was personally concerned, I was just as happy there in winter as in summer, for, to keep myself busy whenever I returned from hunting, I would sit close by the fire and teach my host's daughters to speak French. They made me die of laughing, with their savage pronunciation, which comes entirely from the throat, whereas French is spoken solely from the tongue, without being gutteral [Penicaut as translated by McWilliams 1988:106-113, sic throughout].

In 1712, Penicaut returned to Bayou Castine with orders given by St. Denis to return the Natchitoches to their original home on the Red River. Their departure caused great hostility between the two tribes as is indicated in the following account given by Penicaut (McWilliams 1988:145-146):

> The day after we got there he sent me in a boat, with two Biloxi savages, to the Colapissas village to get the Nassitoches and bring them with their families to Biloxi, so that he could then take them along with him to their old home on the Riviere Rouge. I was the person that had escorted them for M. de St. Denis to the Colapissas village five years before, so that they could live with the Colapissas. The night I got there, I was given a fine reception by the chiefs of the Colapissas and the Nassitoches; but the morning of the next day, when I set out with the Nassitoches and their families, the Colapissas were seized with jealousy or, rather, with rage. Seeing that the Nassitoches women, too, were leaving and were going away with their husbands, they fell upon the Nassitoches with blows of guns, arrows, and hatchets and killed seventeen quite close to me without my being able to stop them. All I could do was save the Chief by keeping him behind me. They seized more than fifty women or girls - the others, men and women, having fled right and left into the woods, wherever they could. When night fell, they came like lost sheep and joined me on the shore of the lake. All that I could get together I took away to M. de St. Denis, who was

> greatly surprised at this grievous occurrence. He intended to take revenge for this at another opportunity and to make the Colapissas give back the women and the girls they had taken from the Nassitoches [Penicaut as translated by McWilliams 1988:145-146, sic throughout].

Between 1718 and 1722, the Acolopissa moved to the east side of the Mississippi River about 35 miles above New Orleans (Swanton 1946:82). In 1722, they were visited there by Father Charlevois. In 1725, Bienville reported that the Acolopissa were once again living at Bayou Castein (Ellis 1981:27):

> To the north of Lake Pontchartrain opposite the mouth of Bayou St. John which is back of New Orleans are the Acolapissas. They now have only one hundred men from four hundred that they used to have, very brave and great hunters. They furnish us almost all the fresh meat that is consumed at New Orleans without however their neglecting the cultivation of their lands which produce a great deal of corn, but as they do not take the trouble to dress their skins we cannot obtain any returns for France from them [Ellis 1981:27].

By 1739, the Acolopissas had moved again to the Mississippi River where they eventually merged with the Bayougoulas and the Houmas, losing their identity as a tribe (Ellis 1981:27; Swanton 1946:82; Price 1982:5-2).

With the intrusion of European settlers into their own territory, the Choctaw Indians migrated into the north shore area and settled between the mouths of Bayou Lacombe and the Tchefuncte River (Ellis 1981:29; Shannon 1989:38). At present, the Choctaw are recognized as a tribe in St. Tammany Parish (Ellis 1981:29). In the early eighteenth century, a number of French settlers resided throughout the north lake region, promoting trade relations with Native Americans and establishing tar production facilities (Ellis 1981:32).

In 1763, under the Treaty of Paris, the north shore was acquired by the British as part of British West Florida (Ellis 1981:42). This brought about a second migration of European settlers into the region. Most of these new arrivals settled near Bayou Castein (Ellis 1981:48). At this time, the economy of the area depended primarily on cattle-raising, agriculture, and the production of indigo

dye. Several plantations were established (Ellis 1981:49; Shannon 1989:38).

On September 21, 1779, during the Revolutionary War, Captain Pickles of the United States Navy landed on and took possession of the north shore. By surrendering, the British citizens of this settlement became the first Louisianans to swear allegiance to the United States (Ellis 1981:55-56). However, at the conclusion of the Revolutionary War, the entire province of West Florida including the north shore was ceded to Spain by the Treaty of Paris of 1783 (Ellis 1981:57). From 1781 to 1810, Spanish control of the north shore brought about a third wave of migration, including settlers from New Orleans and from American territories to the north (Ellis 1981:58; Shannon 1989:40). This resulted in a remarkable increase in population and economic development.

During the West Florida Rebellion of 1810, the American and English settlers revolted against Spain. They wanted to claim the north shore as an independent territory, and they desired a more democratic government. Later in the same year, West Florida was claimed by the United States of America as part of the Louisiana Purchase (Ellis 1981:71-77; Price 1982:6-14).

From 1812 to 1861, the north shore prospered economically as Mississippi River traffic increased and more people traveled north via Lake Pontchartrain to Madisonville and Covington while enroute to other destinations (Ellis 1981:101). Until 1834, Covington and Madisonville were the only two towns in St. Tammany Parish. During the mid-1820s, Bernard P. de Marigny de Mandeville purchased the properties of Antoine Bonnabel and Lewis Davis on the east side of Bayou Castein. Here he built Fountainbleau Plantation. This land, once referred to as Tchefuncte State Park and now as Fountainbleau State Park, is adjacent to the study area. He later acquired land grants along the lakeshore, including an adjoining plantation on the west. In 1834, he subdivided this land. Lots and squares of the town of Mandeville were auctioned in New Orleans on February 24-26, 1834 (Ellis 1981:110-111).

A gambling casino and a hotel were built in the newly established town. Regular steamboat excursions carrying passengers from New Orleans to Mandeville became popular. The fresh air, cool breezes, and the scenic lakefront beach were all promoted, and as a result the town flourished as a popular resort. Many hotels, boarding houses, and restaurants were established (Kemp and Colvin 1981:2).

Mandeville was becoming a prime location for daily excursions and summer vacations.

The economy of the area also depended on trade with New Orleans. In the earlier years of its development, St. Tammany Parish was primarily an agricultural community consisting of small farms and a number of cotton plantations. Later, cattle-raising, brick-making, ship-building, and the lumber industry caused further economic growth and an increase in the population of the region. The manufacture of turpentine, tar, pitch resin, and charcoal also continued as industries advantageous to the economic development of St. Tammany Parish (Ellis 1981:103-109).

The economy of the north shore was adversely affected by the Civil War. A halt was put on trade between New Orleans, which was controlled by Federal forces, and St. Tammany Parish, which was controlled by Confederate forces. However, smuggling flourished despite efforts made by both sides to prevent the act. Docks and landings were burned by Confederates at Mandeville and at Lewisburg. On August 1, 1862, this area was reported as being destitute and abandoned (Ellis 1981:134-137).

During the reconstruction period, economic growth and development slowly resumed. The three main industries were brick-making, ship-building, and lumbering which continued to flourish into the early twentieth century. From 1880 to 1920, with the establishment of railroads, the lumber industry peaked. In 1909, a line was completed by the New Orleans Railway and Ferry Company. It ran from Covington to Abita Springs and then to Mandeville where a pier extended into the lake. The pier allowed a connection with steamer lines which crossed the lake to New Orleans (Ellis 1981:171). This pier ran between Coffee and Carroll Streets (Hennick and Charlton 1962:123). Another steamer wharf extended out over the lake at the foot of Girod Street (Ellis 1981:234).

In 1913, The Poitevent and Favre Lumber Company relocated its mill from Pearlington to Mandeville, just east of the present-day Causeway toll plaza, west of the study area (Ellis 1981:175). The building of this sawmill along with the promotion of the "Ozone Belt" as a resort for New Orleans residents caused a boost in the economy of the area.

Mandeville was again flourishing as a popular resort. Piers, wharves, bathhouses, and other recreational facilities such as water slides were built along the lakefront to accommodate the visitors. Oral informants indicate that there were piers and bathhouses extending into

the lake in front of almost every building, both residential and commercial, along Lakeshore Drive (Clifford Cade and H. Langenagennig, personal communication 1993). At the turn of the century, a number of new hotels, boarding houses, restaurants, and the Mandeville Yacht Club were established.

A wooden seawall was built along the lakeshore of Mandeville between 1893 and 1895. This seawall was constructed of heart pine (Colvin n.d.:8). The ca. 189[illegible] wooden seawall evidently varied in construction along its length. Figure 4, from a postcard dated ca. 1910, shows two portions of the seawall of differing construction, separated by what appears to be a large stump. The well-photographed wooden seawall portions extant in 1937 (see below) may be representative of later construction.

In 1913, a contract was issued by the town of Mandeville for the construction of a concrete seawall along the town's lakefront. This contract was evidently not filled (Ellis 1981:237). Contradictory information exists as to when a concrete seawall was actually first built. The Works Progress Administration publication Work (1938) stated that a 7,000-foot concrete seawall with an additional 1,200 foot wooden seawall was constructed in 1915 and damaged the same year by a severe hurricane. Heavy wharf pilings were driven against the wall by the storm, opening five gaps in the new structure. Local historian Frederick Ellis (1981) states that a contract for construction of a seawall was issued by Mandeville in June 1916 and that the wall was actually built 1916-1921 (Ellis 1981:237). It is possible that this contract was for the repair or extension of a previous wall; however, the unknown author of the Work article mentions that repairs to the seawall were not undertaken in the aftermath of the 1915 storm.

A photograph published in 1918 (from Ialeské-Chata 1918) appears as Figure 5 and shows wharf pilings and the first concrete seawall in the central portion of the Mandeville lakefront. The wall at that date was not in good condition, as numerous cracks in it are visible in the original book illustration. The seawall at this particular point rose a few feet above the surface of the ground on its landward side. The land side of the wooden seawall near the foot of West Beach Parkway in 1937 is shown in Figure 6, the lake side in Figure 7.

In 1937 the Works Progress Administration responded to a proposal from the town of Mandeville and began rebuilding the seawall. The project included constructing concrete copings, building 150-foot long concrete groins extending into the lake to collect sand and form a bathing beach,

Figure 4. Ca. 1910 postcard of ca. 1895 wooden seawall (Louisiana Collection, Tulane University).

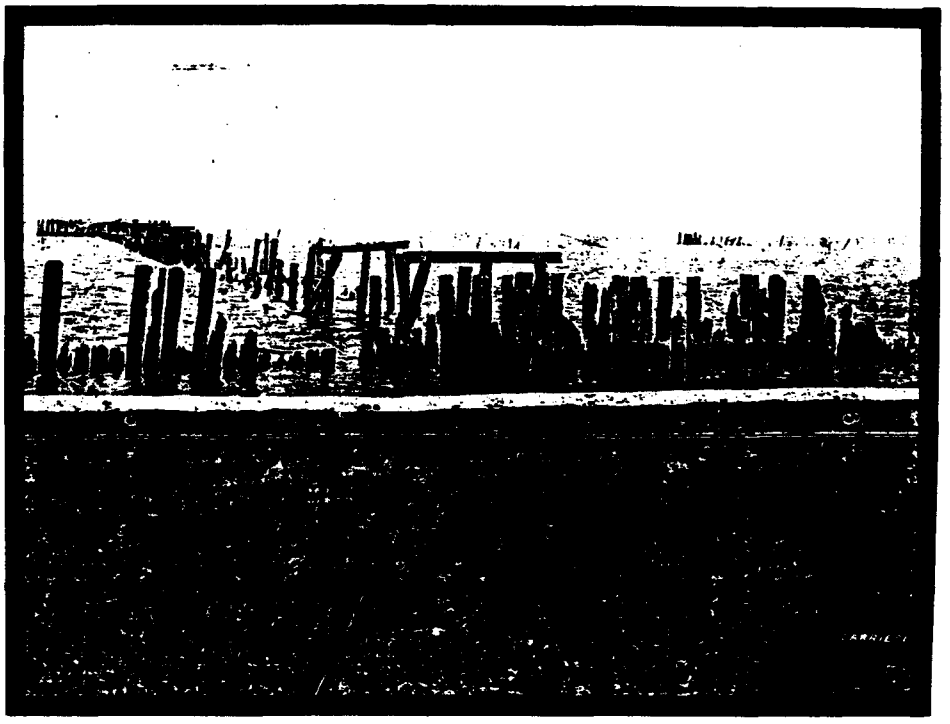


Figure 5. 1918 photograph of wharf pilings and concrete seawall (Ialeské-Chata 1918).

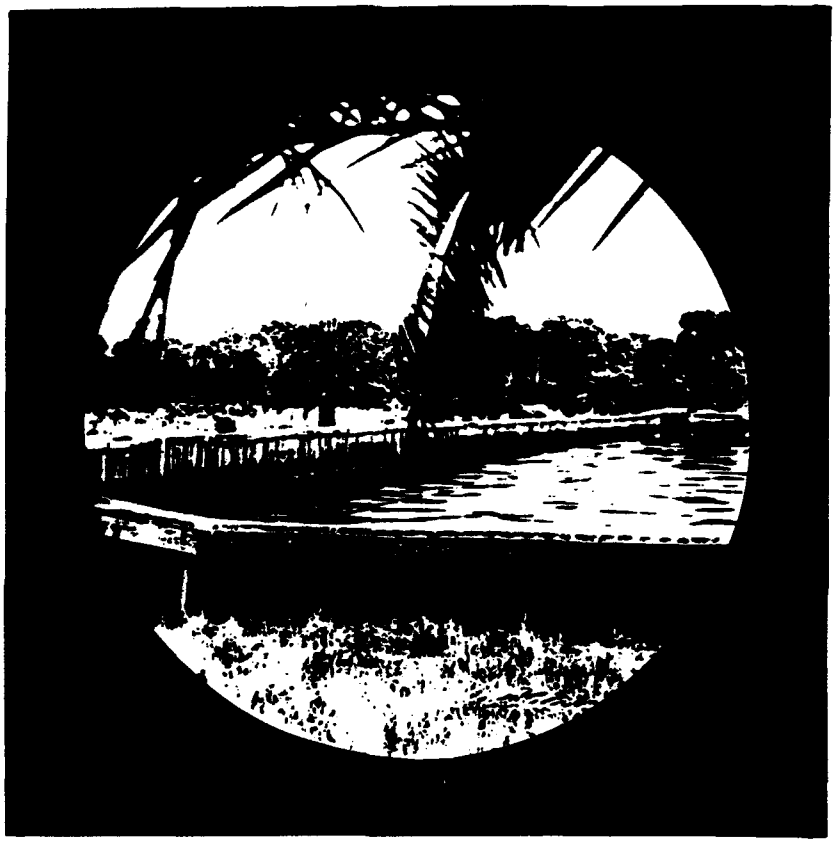


Figure 6. Photograph of land side of wooden seawall in 1937 (Work 1938).

Figure 7. Photograph of lake side of wooden seawall in 193[illegible] (Nichols 1990).

rebuilding parts of the existing concrete wall that had been destroyed, repairing minor breaks in the wall, and replacing the wooden portions of the wall with precast concrete pilings. In addition, sidewalks, steps, bridges, and drinking fountains were to be built, "all incidental to the general development of a Bathing and Recreational Beach" (Attachment 2, Scope of Services). The projected cost was $235,000. Work was begun in 1937 and was scheduled to be completed in the summer of 1939, with 100 men and two pile drivers utilized in the project. Forms were built and the concrete pilings cast on the oak-shaded lakefront (Work 1938).

In Figure 8, a large pile driver is seen working on the lake side of the ca. 1915-1921 concrete seawall, perhaps placing footings for the groins. Figure 9 shows the general form of the concrete piling wall constructed on the lake side of the wooden portions of the ca. 1895-1921 seawall. A series of log pilings stand in the lake about eight feet from the concrete wall pilings. Their engineering function is not known. Figure 10 shows a smaller pile driver setting the concrete piles in one of the gaps that had developed in the ca. 1915-1921 concrete seawall.

It appears from Figure 9 that the WPA seawall was built to approximately the same height as the pre-existing wooden seawall. Work mentions "grading" and landscaping of the area to the landward side of the seawall to create a picnic area. Obviously, considerable filling must have been undertaken to raise and level the ground surface on the landward side of the wall, which rises to near the crown of the contemporary seawall. As can be deduced from Figure 10, even more substantial filling behind the WPA seawall was necessary where the ca. 1915-1921 concrete wall had developed gaps.

A U.S. Army Corps of Engineers publication (1962) contains a sectional drawing (Figure 11) of the Mandeville seawall, which may have been taken from WPA documents. From photographic evidence this would appear to be the typical section where the WPA built the concrete wall on the lake side of the wooden seawall. The space between the wooden wall (which had evidently been removed) and the concrete pilings was filled with clam shell back fill and covered with a clay blanket. Leveling of the ground surface on the land side of the wall was achieved with random backfill.

The Sanborn Fire Insurance Maps of 1904, 1909, 1915, and 1926 portray many recreational establishments. An overview of the layout of the streets of Mandeville can be seen in Figure 12. There are many private residential

Figure 8. Photograph of WPA pile driver at work on lake side of ca. 1915-1921 concrete seawall, 1937 (Nichols 1990).

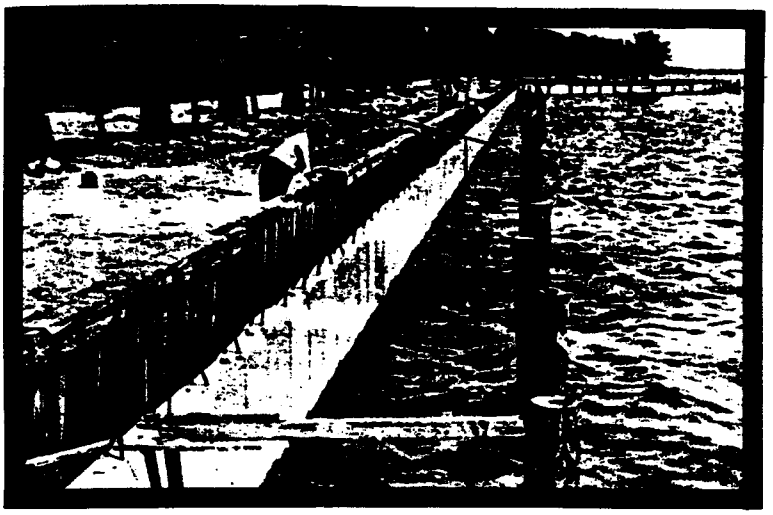


Figure 9. Photograph of WPA construction of seawall on lake side of wooden seawall (Nichols 1990).

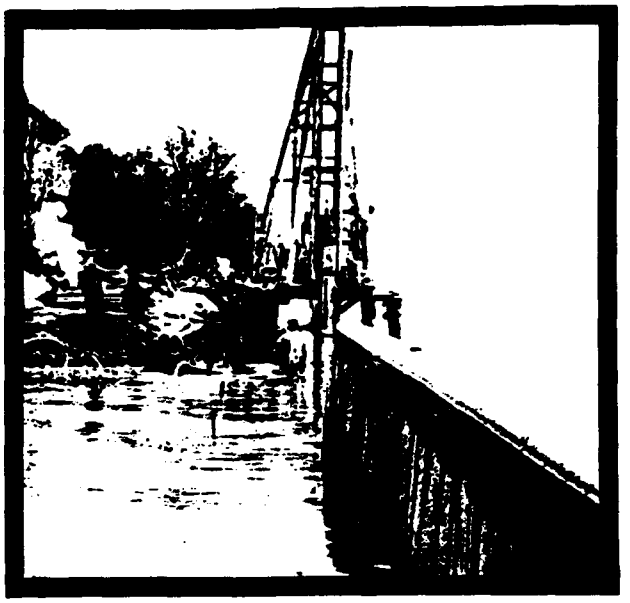


Figure 10. Photograph of WPA pile driver driving concrete pilings, 1937 (Work 1938).

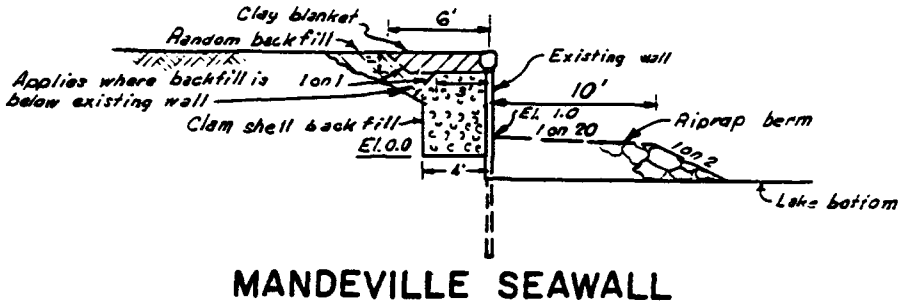


Figure 11. Cross-section of Mandeville seawall (US Army Corps of Engineers 1962).

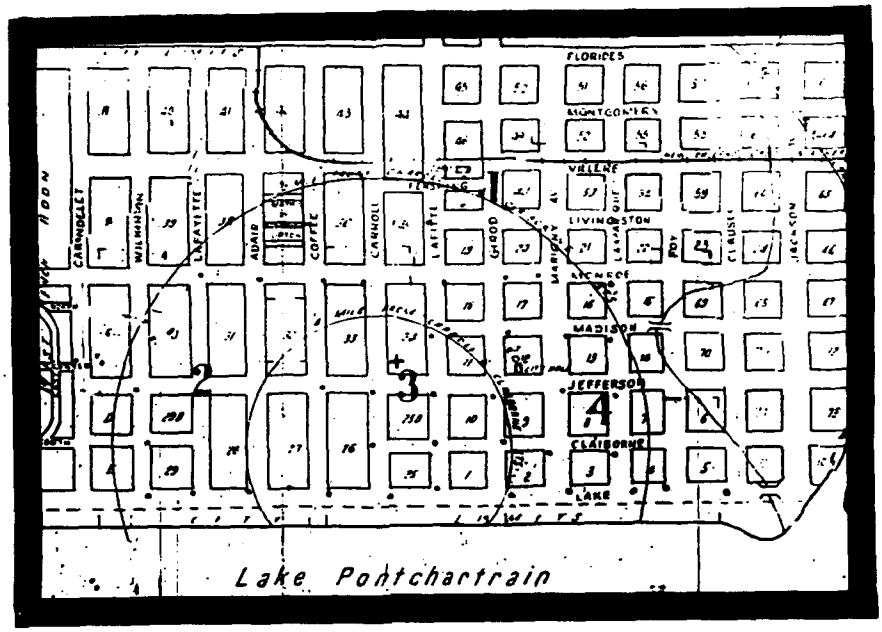


Figure 12. Excerpt from the Sanborn Fire Insurance Map of 1926 showing an overview of the layout of the streets of Mandeville.

buildings shown in the five-block area of Lake Street between Adair Street and Marigny Avenue on the Sanborn Map of 1904. This map (Figures 13, 14, and 15) also portrays the Lake View Hotel, the W.(?) Hotel, a drugstore, Mugnier's Hotel, a casino which was called Paul's (Arceneaux) Exchange and is now Bechac's Restaurant, and a grocery (Ellis 1981:234).

The above area is portrayed again on the Sanborn Map of 1909 (Figures 16, 17, and 18). The W.(?) Hotel, drugstore, and casino are no longer shown. On this map, the Welcome Hotel is in the same building as the grocery was in 1904, and the Mitchell Hotel is on the next block. The Sanborn Map of 1915 portrays the same area mentioned above (Figure 19, 20, and 21). In addition to private residential buildings, there is an office, a confectionary, a boarding house, the Rest A While Charitable Home for Poor Women (Ellis 1981:234), a second confectionary, a movie theater, a drugstore, Mugnier's Hotel, a restaurant, and the Mandeville Inn which had been the Welcome Hotel in 1909.

The Sanborn Map of 1926 portrays an eleven-block area between Carondelet and Clausei Streets (Figures 22, 23, and 24). In addition to private residential buildings, the map shows the Hotel Audubon, the Rest A While, the St. Tammany Hotel which had earlier been Mugnier's Hotel, a restaurant associated with the St. Tammany Hotel, a movie theater (in a different location than that depicted in 1915), and a second restaurant.

Weekends and summer vacations were spent by many along the lakeshore of Mandeville. From the turn of the century to the early 1930s, it was an easy, convenient destination for steamboats and schooners crossing the lake. However, the advent of the automobile and later the Great Depression caused the economy of the area to decline (Ellis 1981:178-200). The lumber boom also ended after World War I (Shannon 1989:41).

During the mid-twentieth century, the economy of the area developed only slightly until the Causeway Bridge was built in the 1960s. With the building of this bridge, the area began to develop as a commuter community for New Orleans. There was a decline in this development in the 1980s associated with the decline in the oil industry of Louisiana (Shannon 1989:41).

Archeological Expectations

Historical documentation of the Mandeville seawall construction provides little expectation of significant

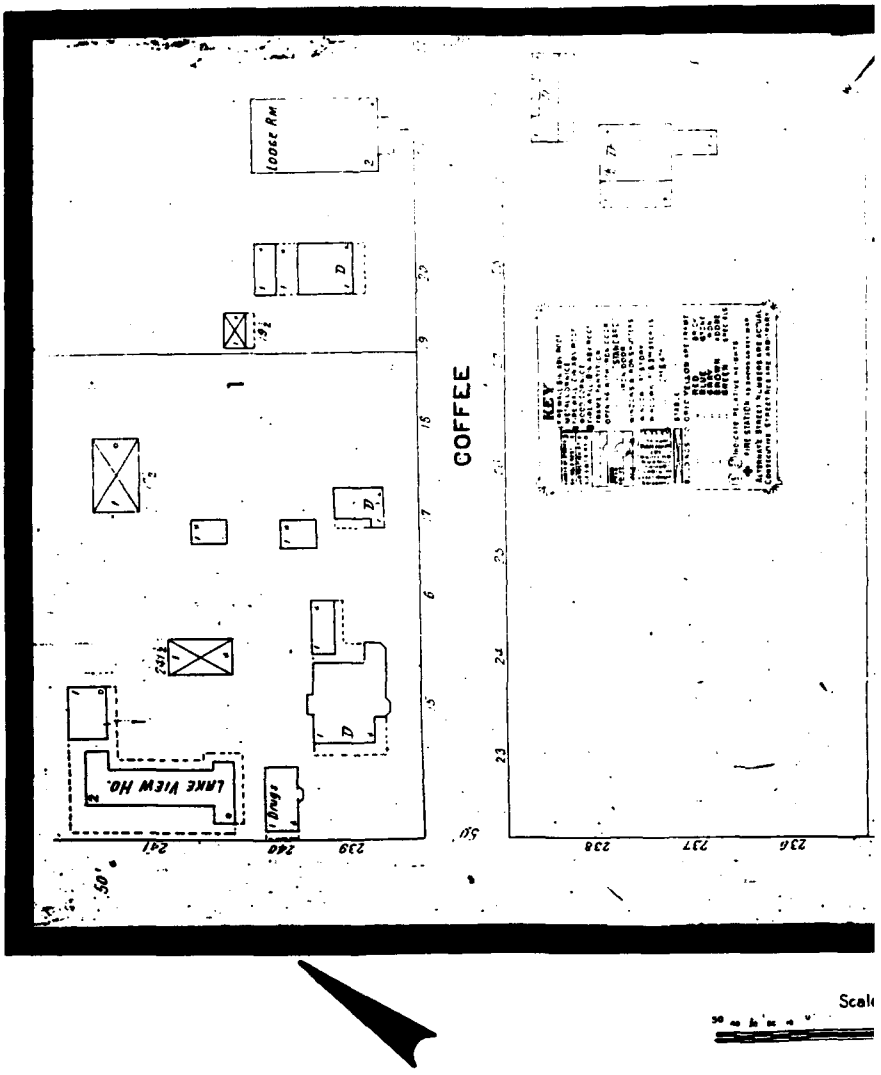
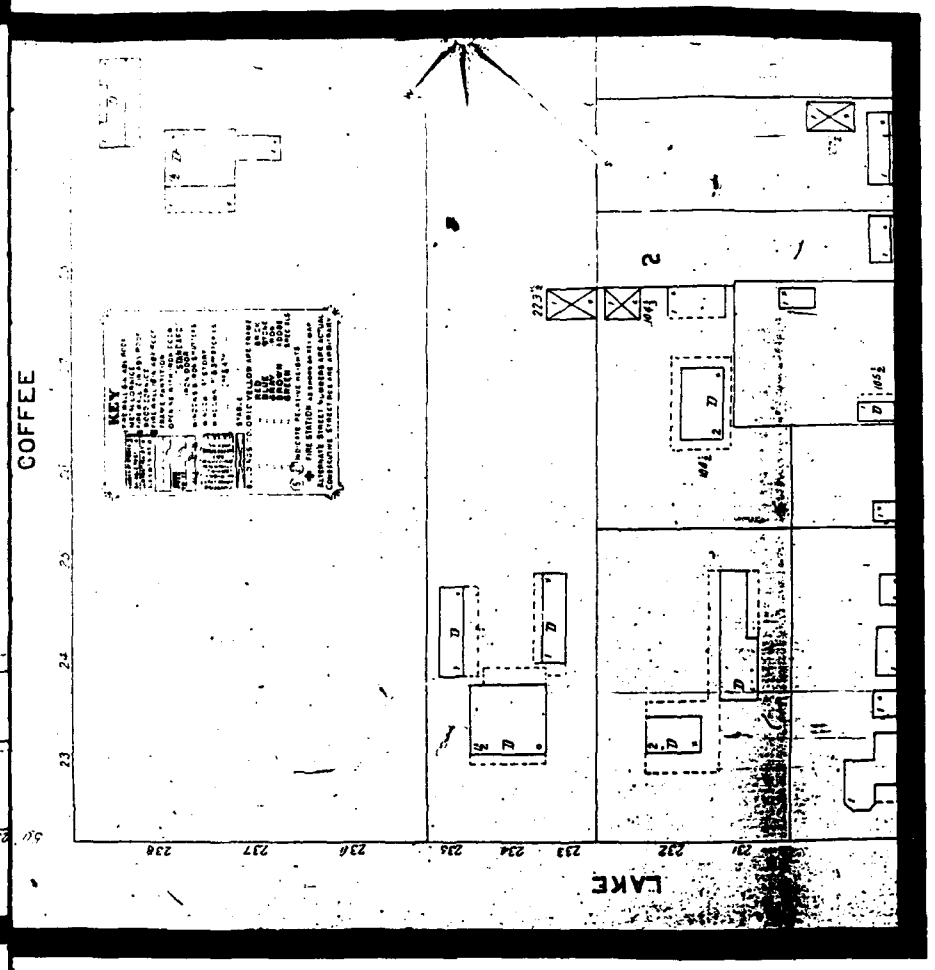


Figure 13. Excerpt from the Sanborn Fire I
1904.



cerpt from the Sanborn Fire Insurance Map of

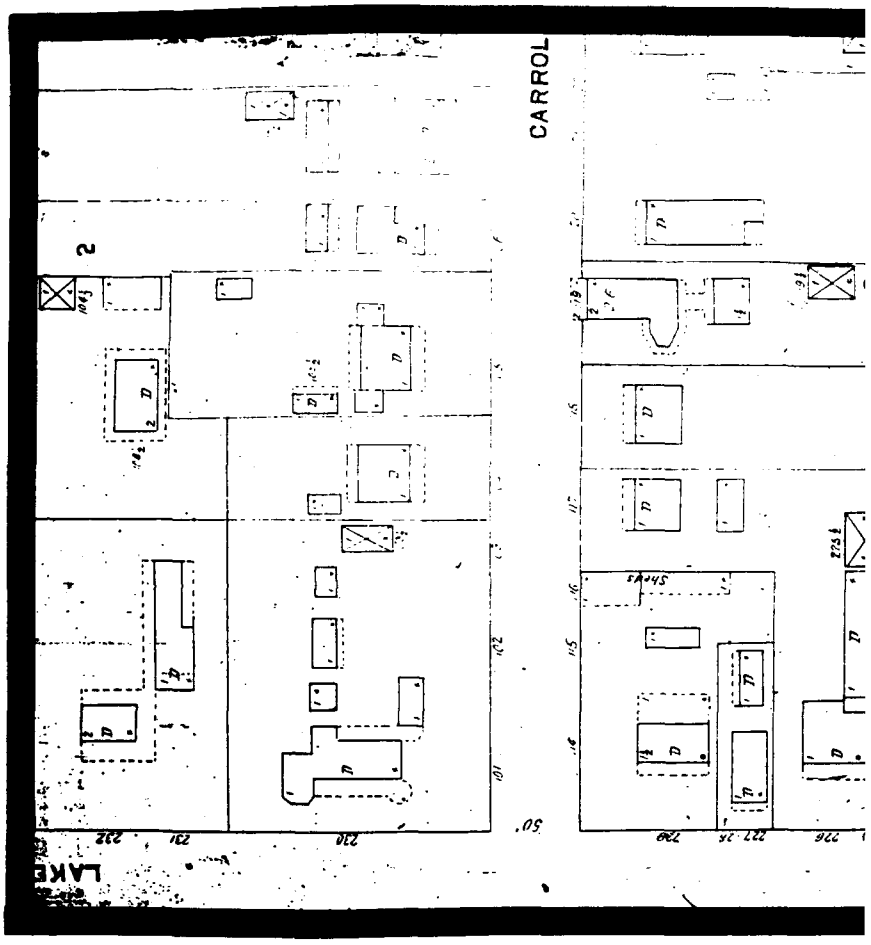
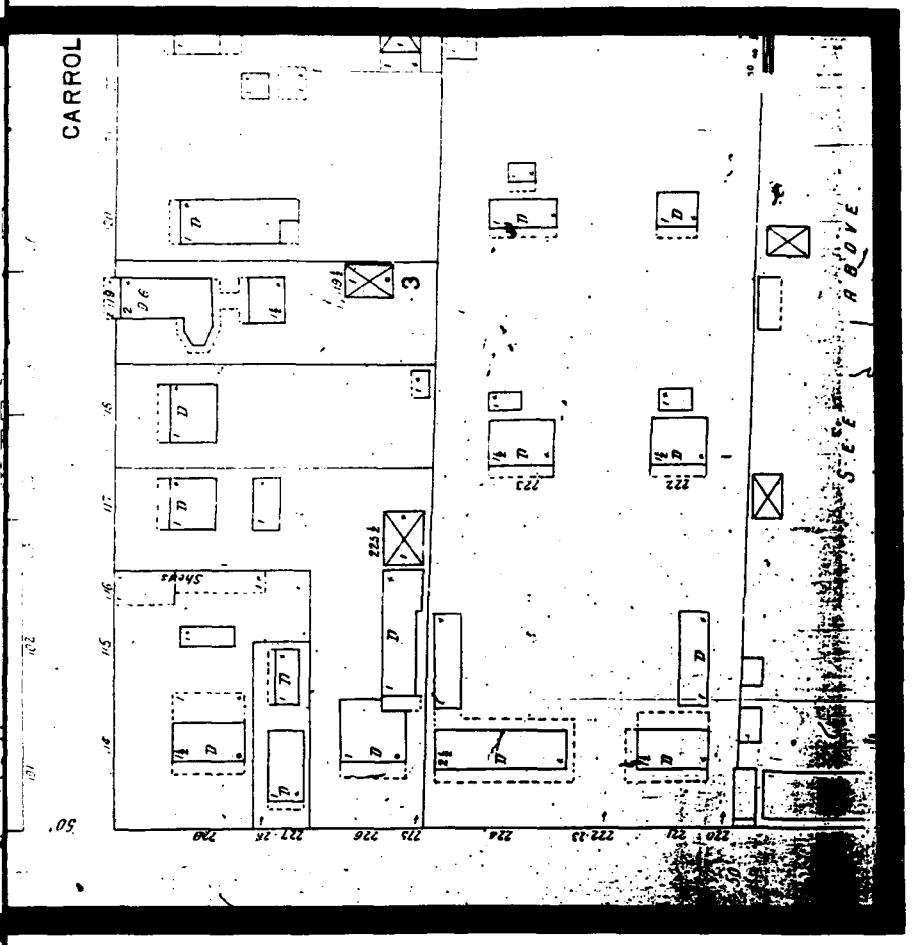


**Figure 14. Excerpt from the Sanborn Fire
1904.**



Excerpt from the Sanborn Fire Insurance Map of

(2)

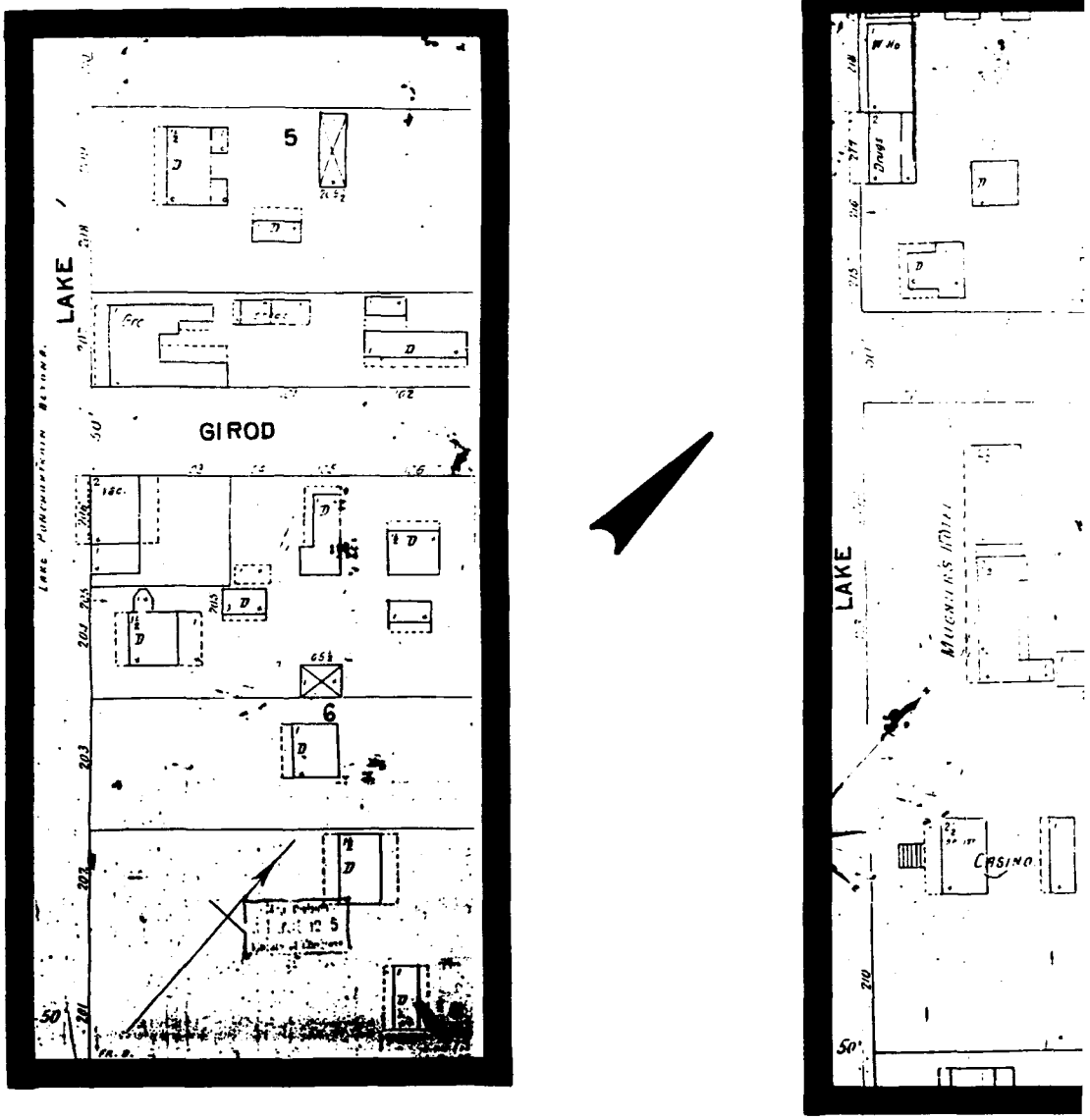
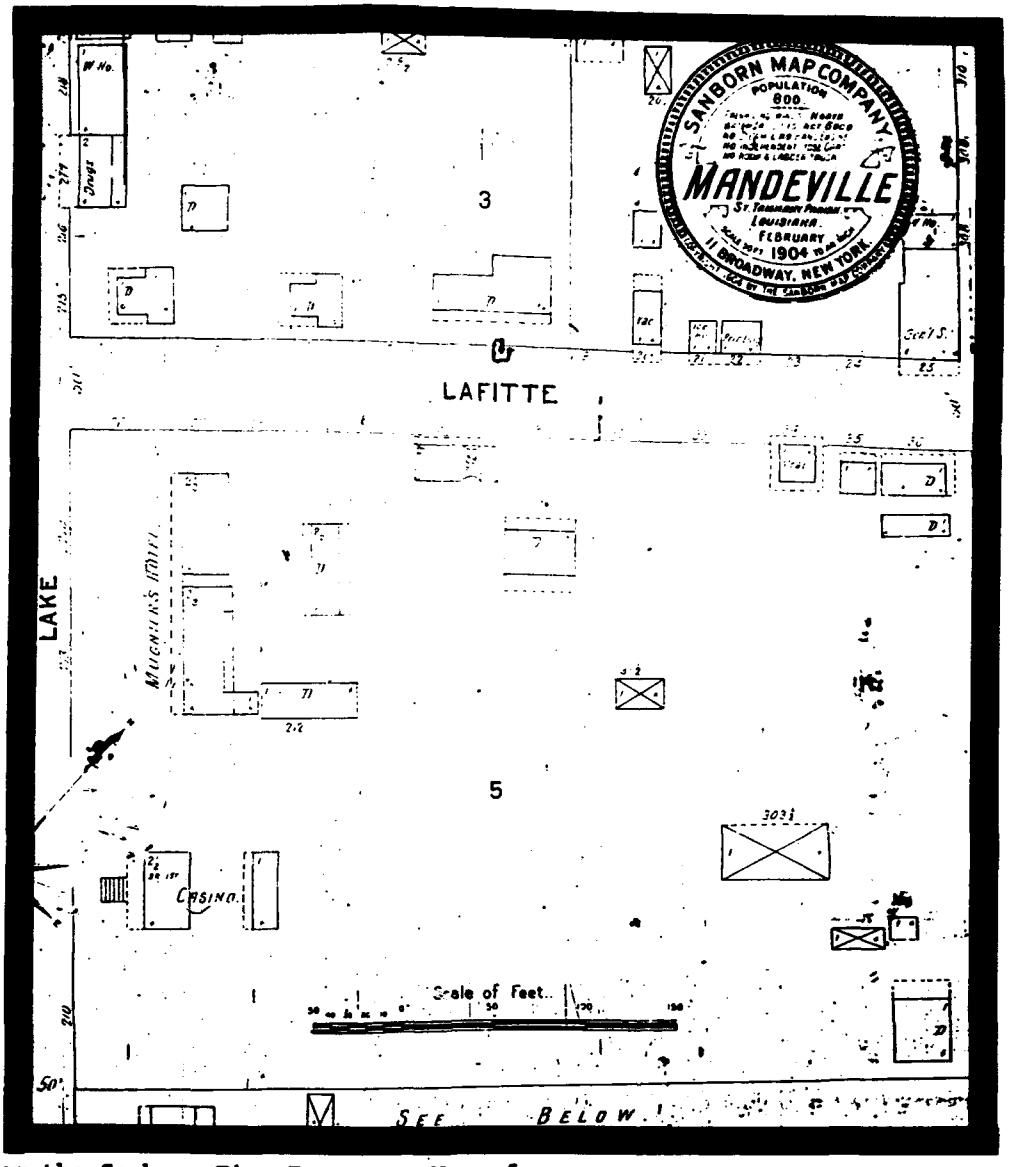


Figure 15. Excerpt from the Sanborn Fire
1904.

(1)



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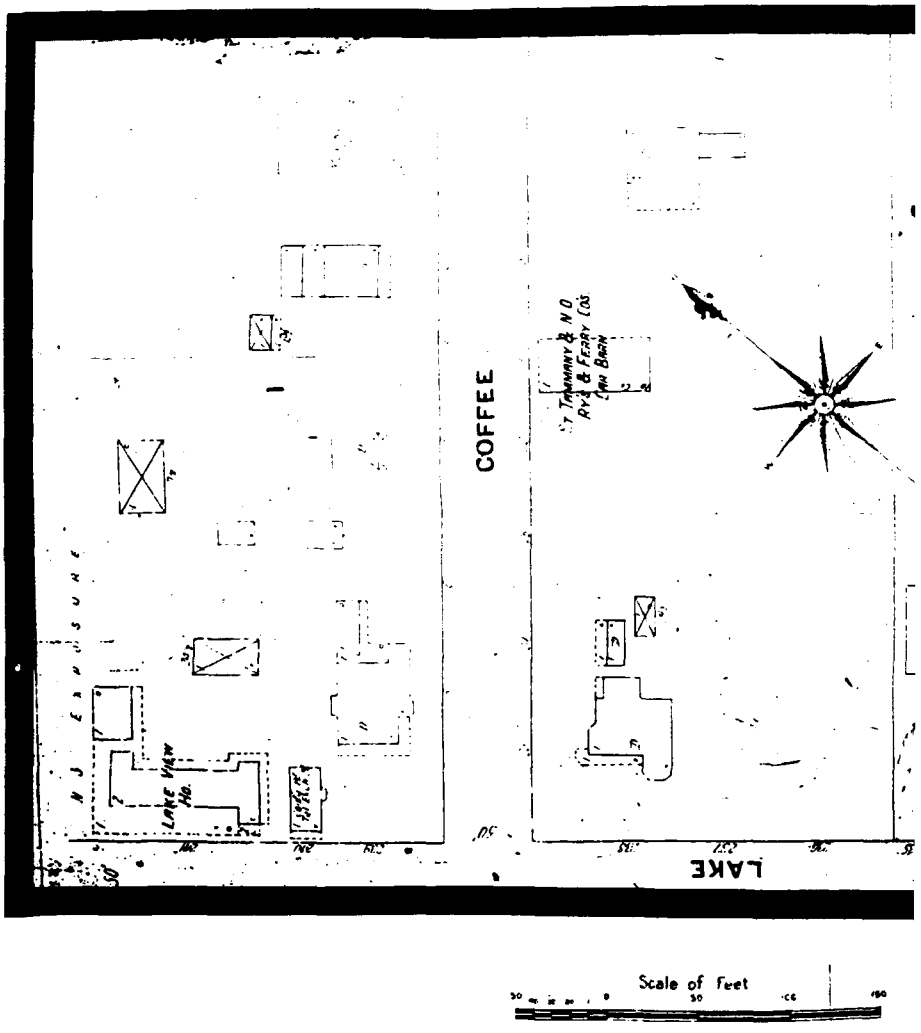
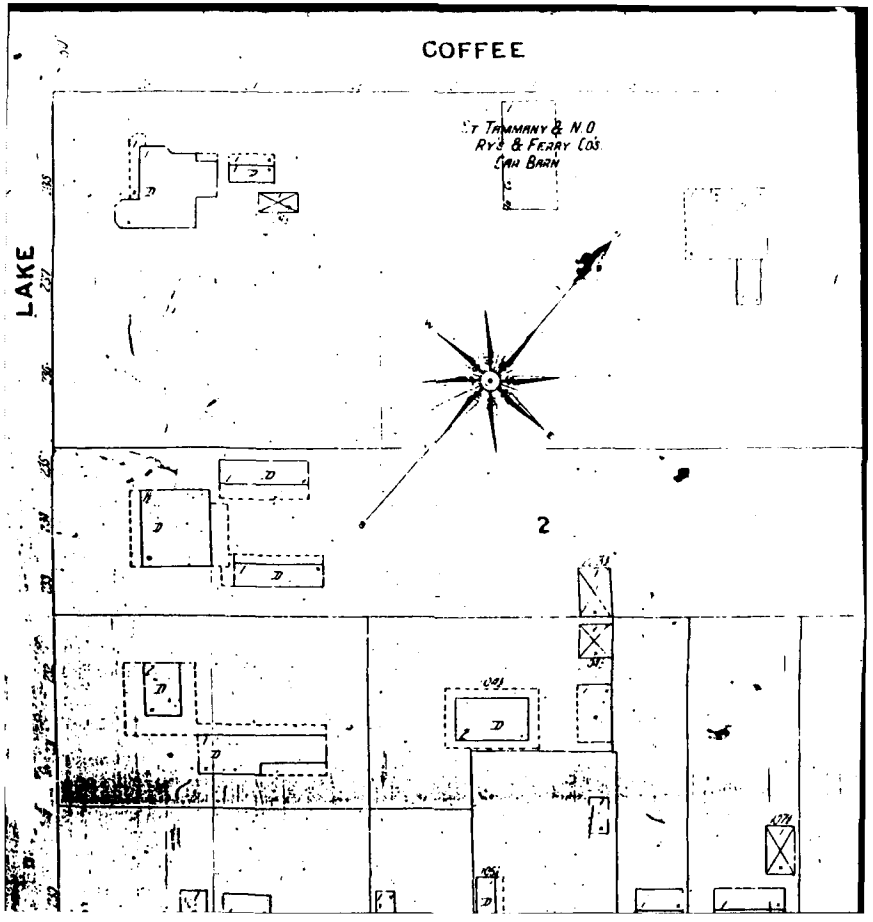


**Figure 16. Excerpt from the Sanborn Fir
1909.**


COFFEE
LAKE
ST TAMMANY & N.O.
RY'S & FERRY CO'S
CAR BARN
2

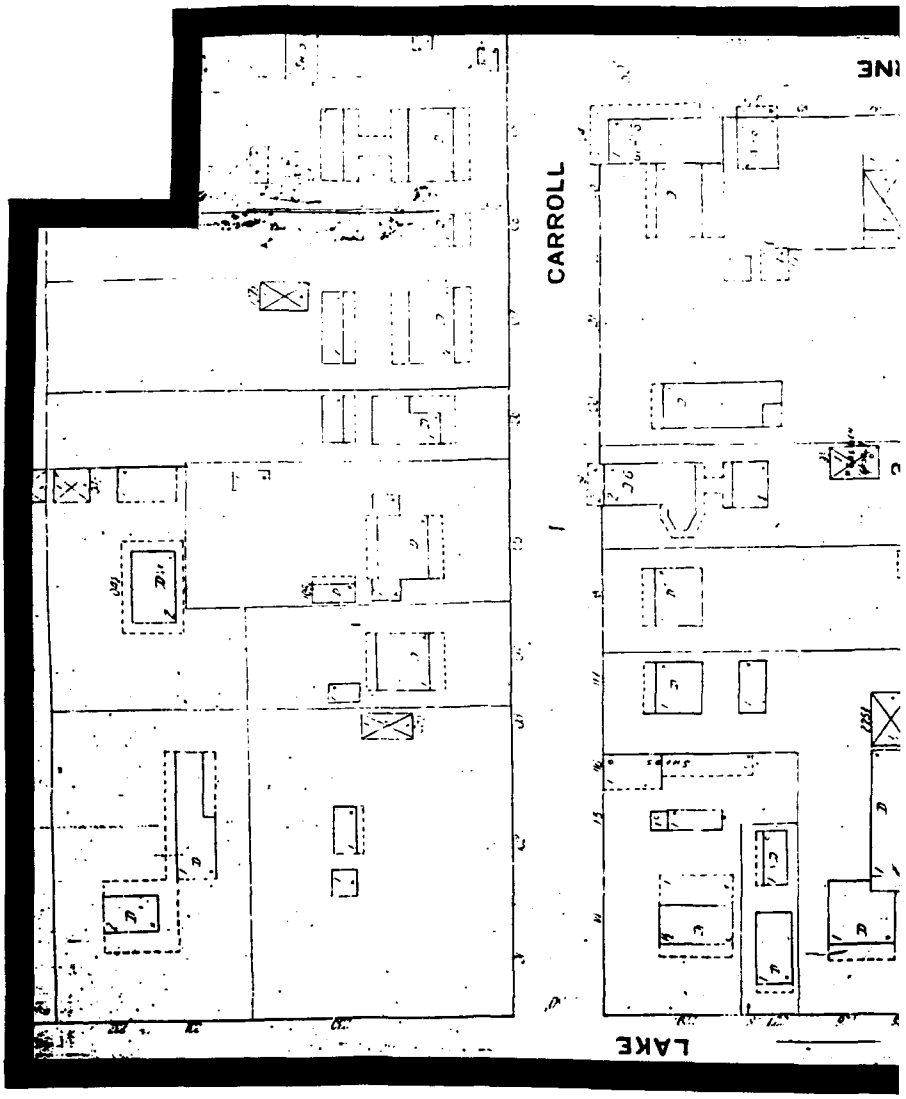
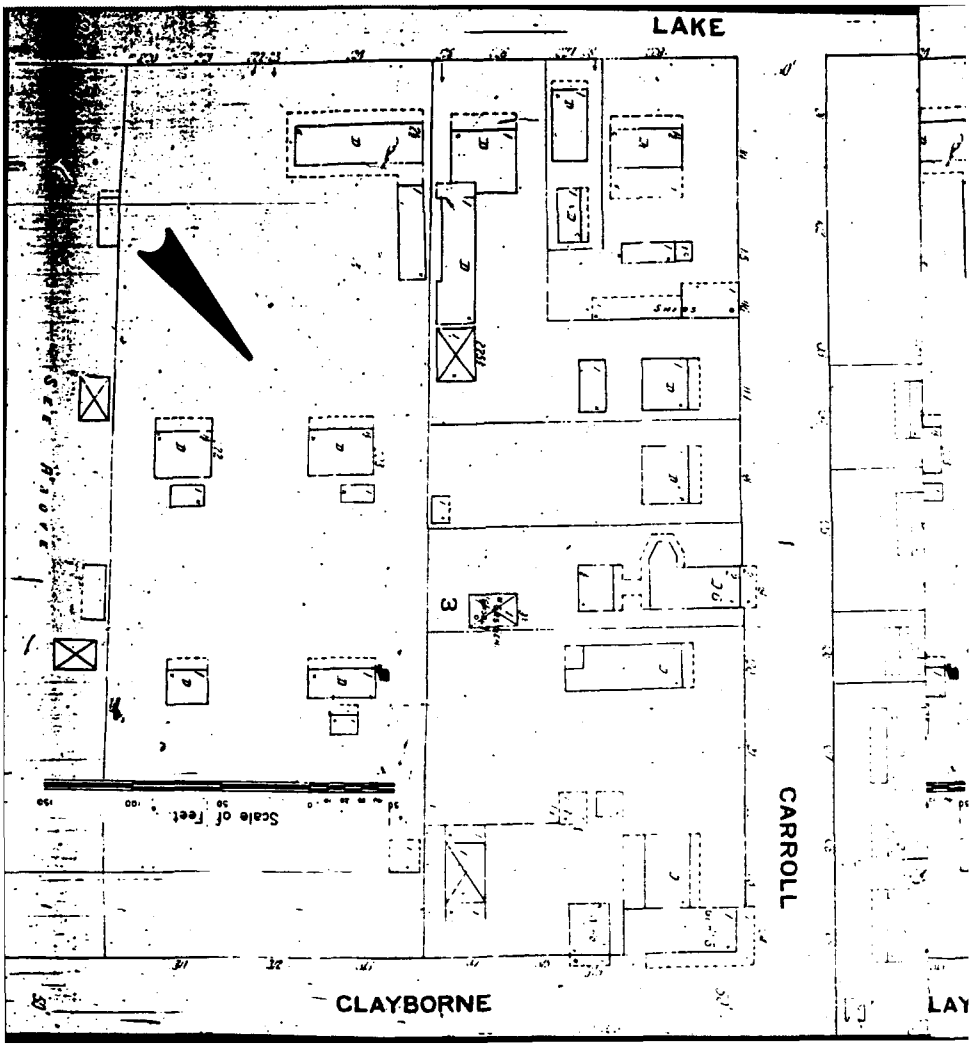


**Figure 17. Excerpt from the Sanborn Fire Ins
1909.**

(1)


LAKE
CARROLL
CLAYBORNE
Scale of Feet

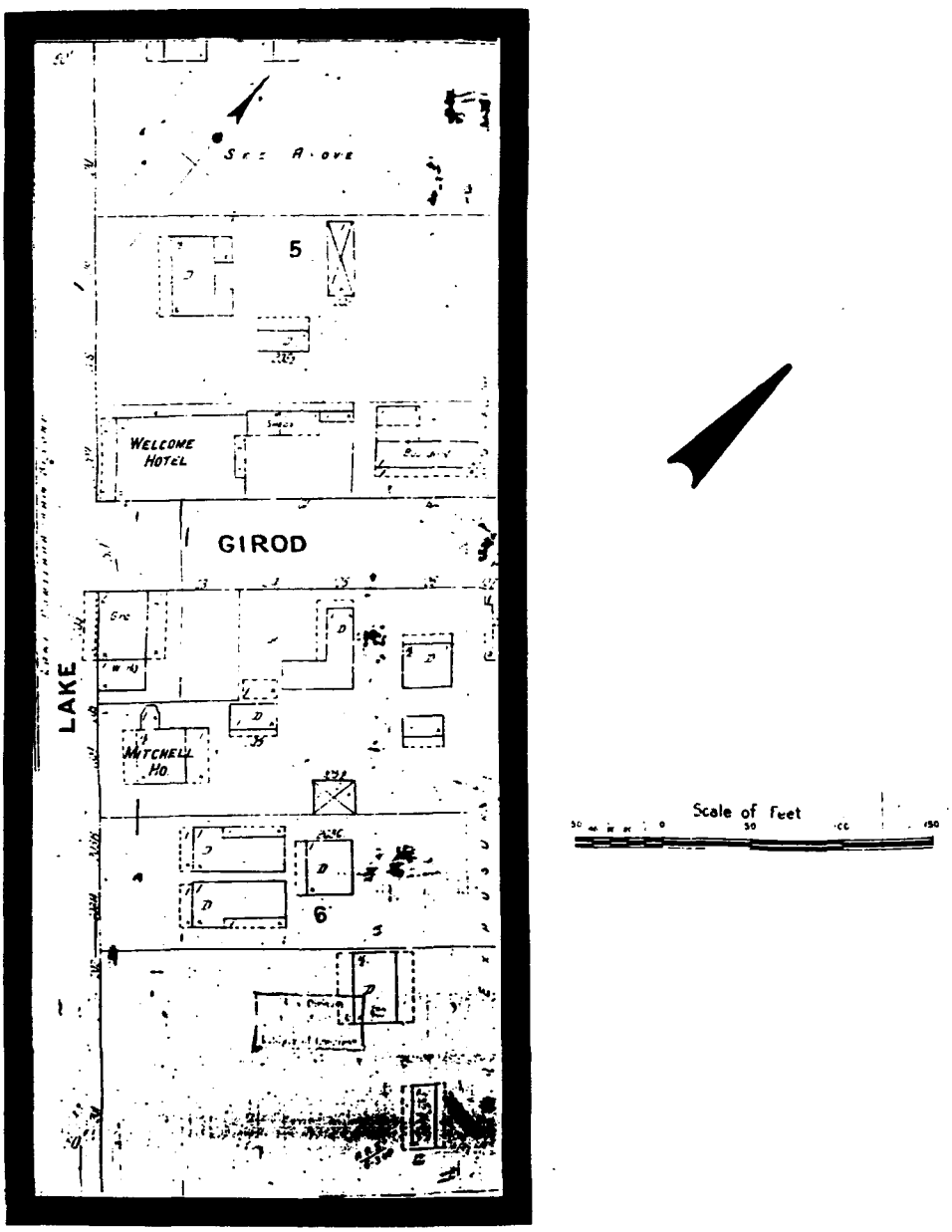
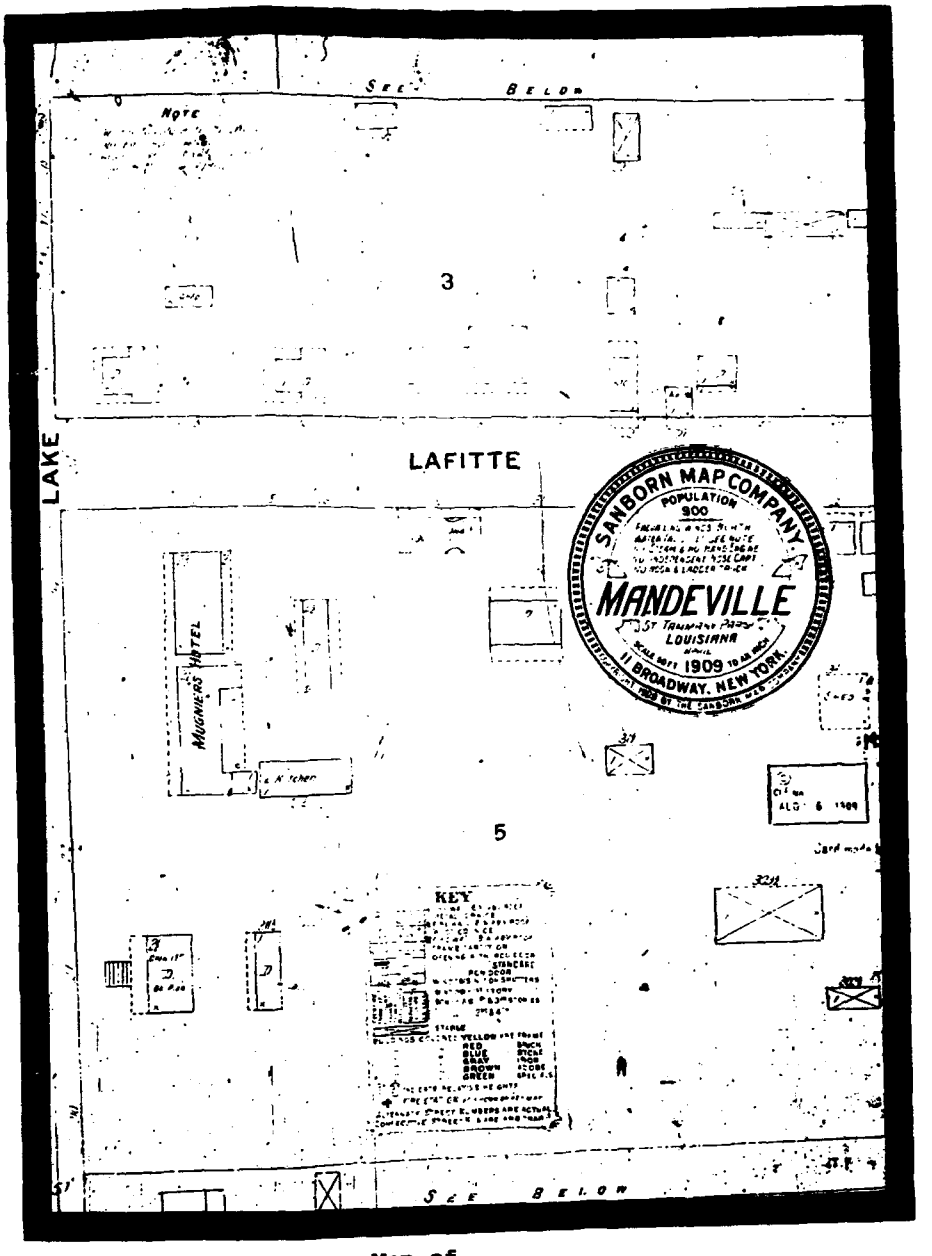
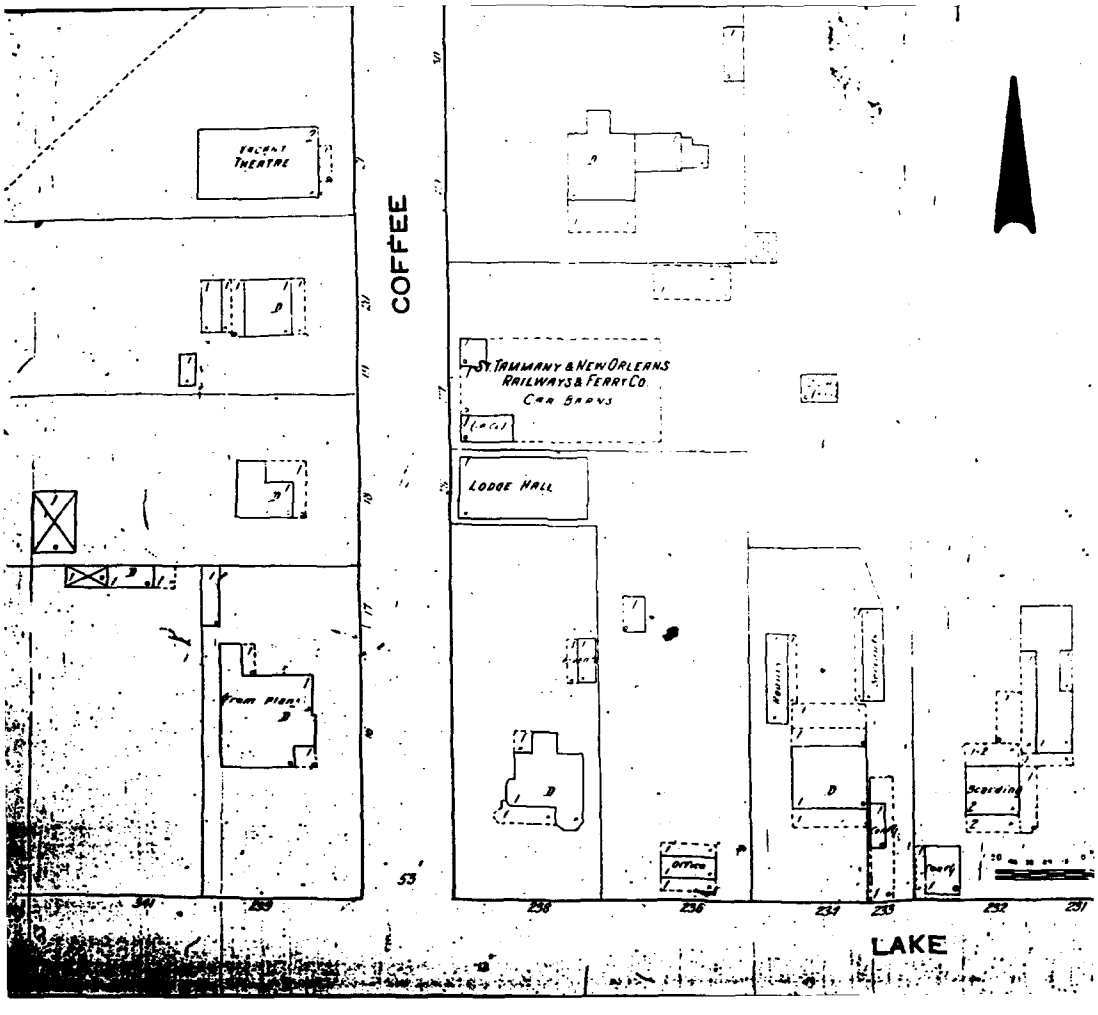
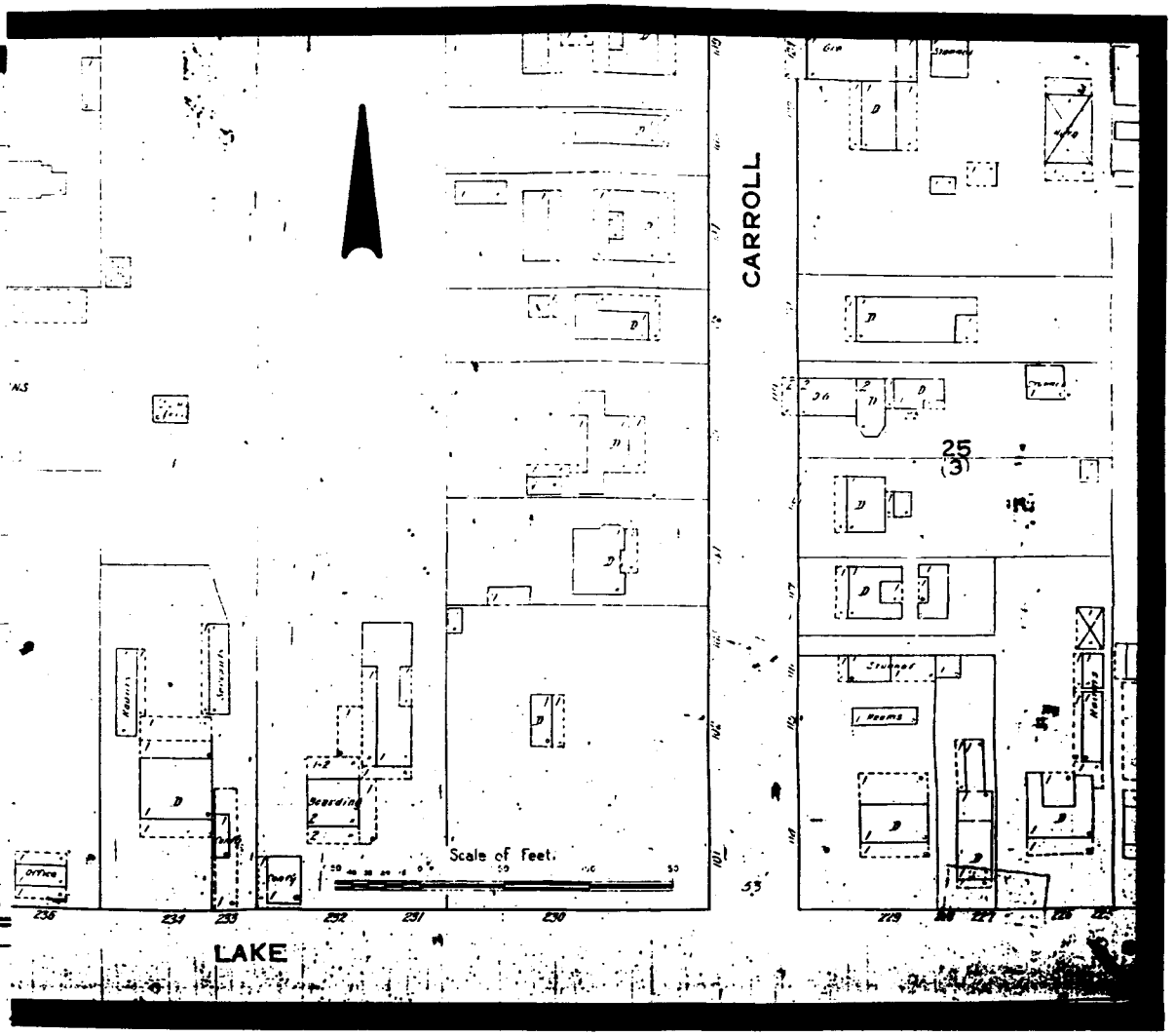


Figure 18. Excerpt from the Sanborn 1909.



Excerpt from the Sanborn Fire Insurance Map of


VACANT THEATRE
COFFEE
ST. TAMMANY & NEW ORLEANS RAILWAYS & FERRY CO. CAR BARNS
LODGE HALL
Scarding
LAKE



Excerpt from the Sanborn Fire Insurance Map of

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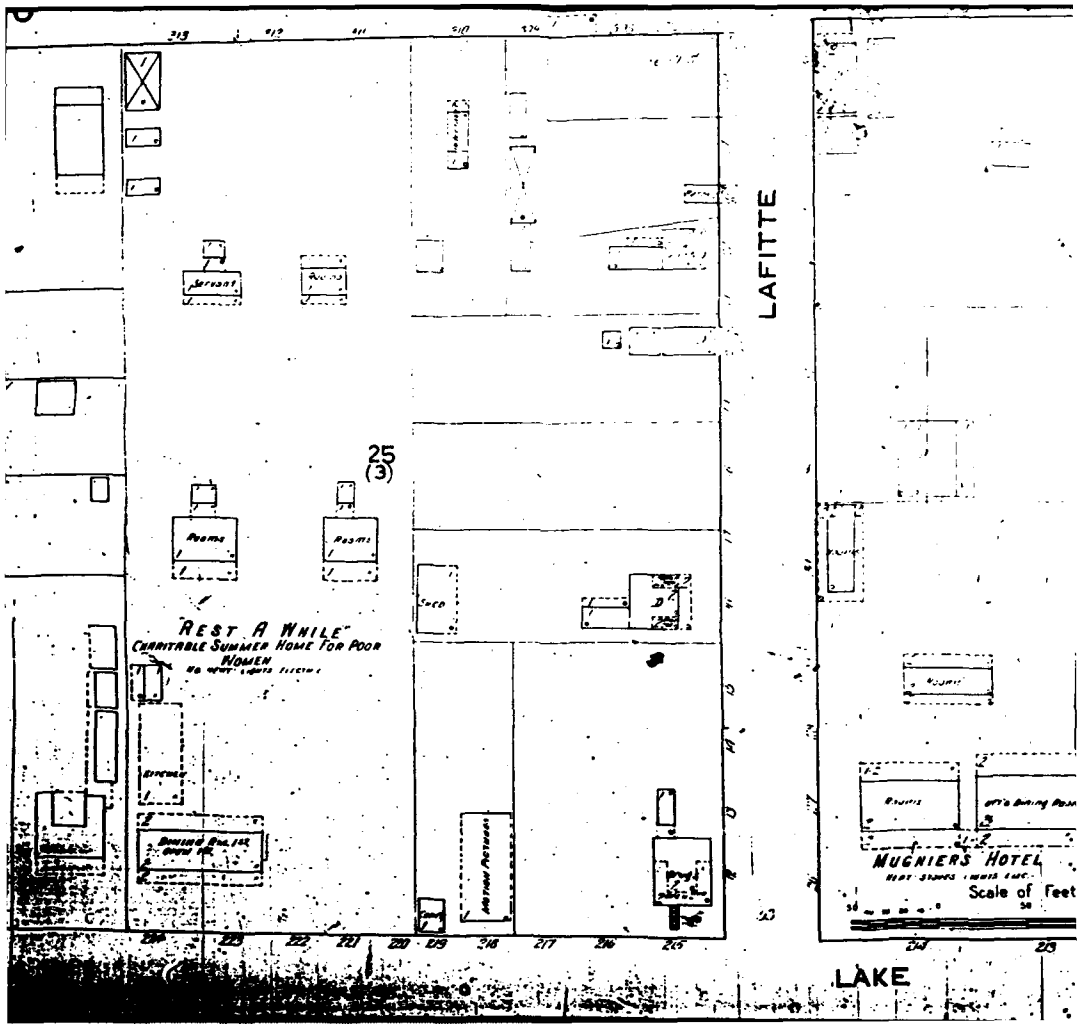
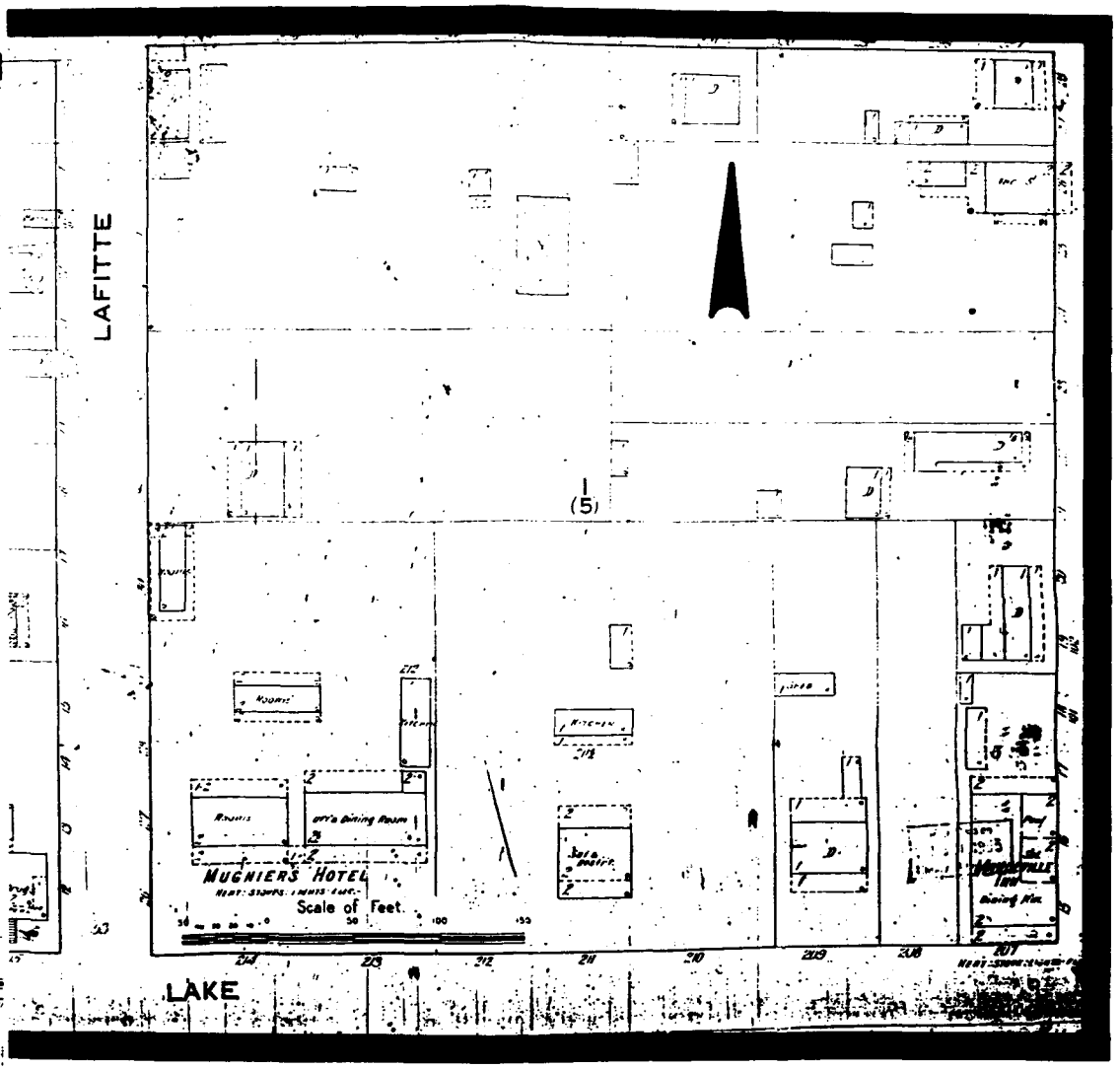

LAFITTE
25
(3)
"REST A WHILE"
CHARITABLE SUMMER HOME FOR POOR
WOMEN
MUGNIER'S HOTEL
Scale of Feet
LAKE



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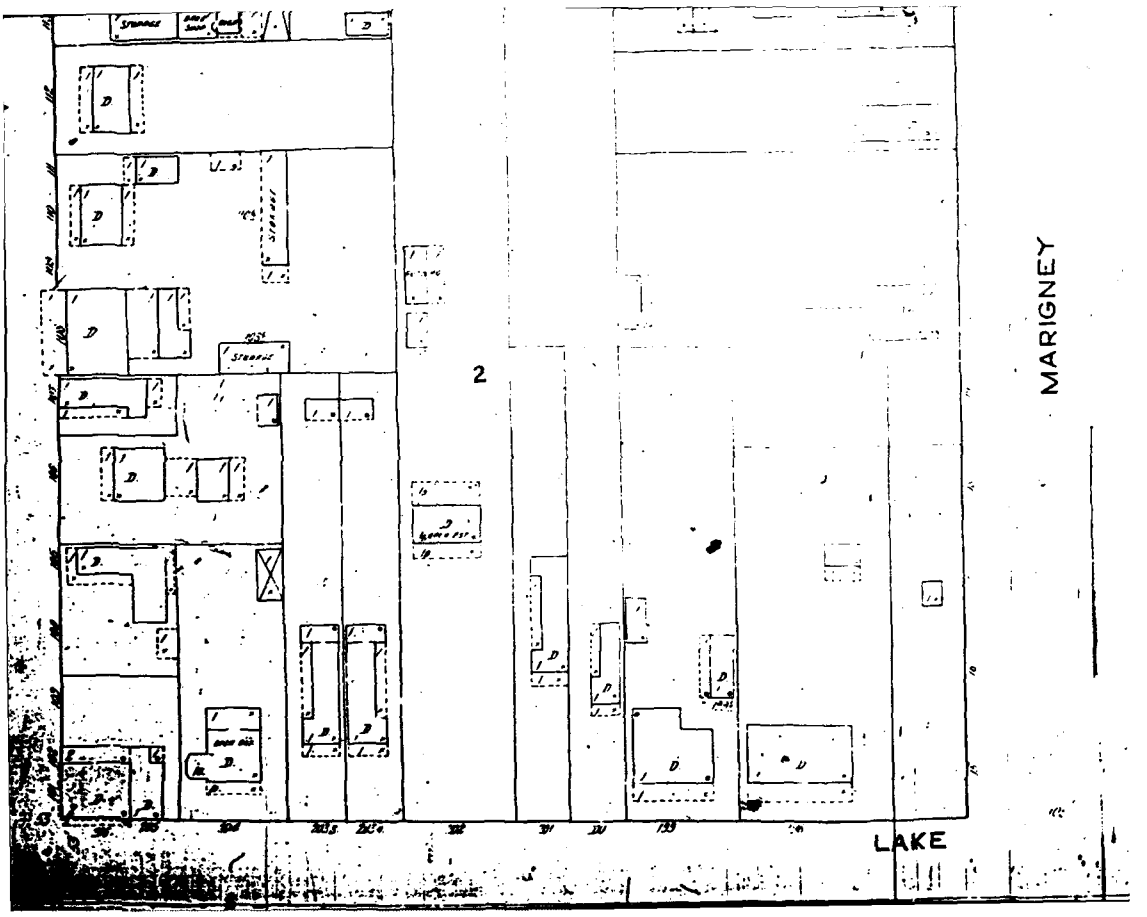
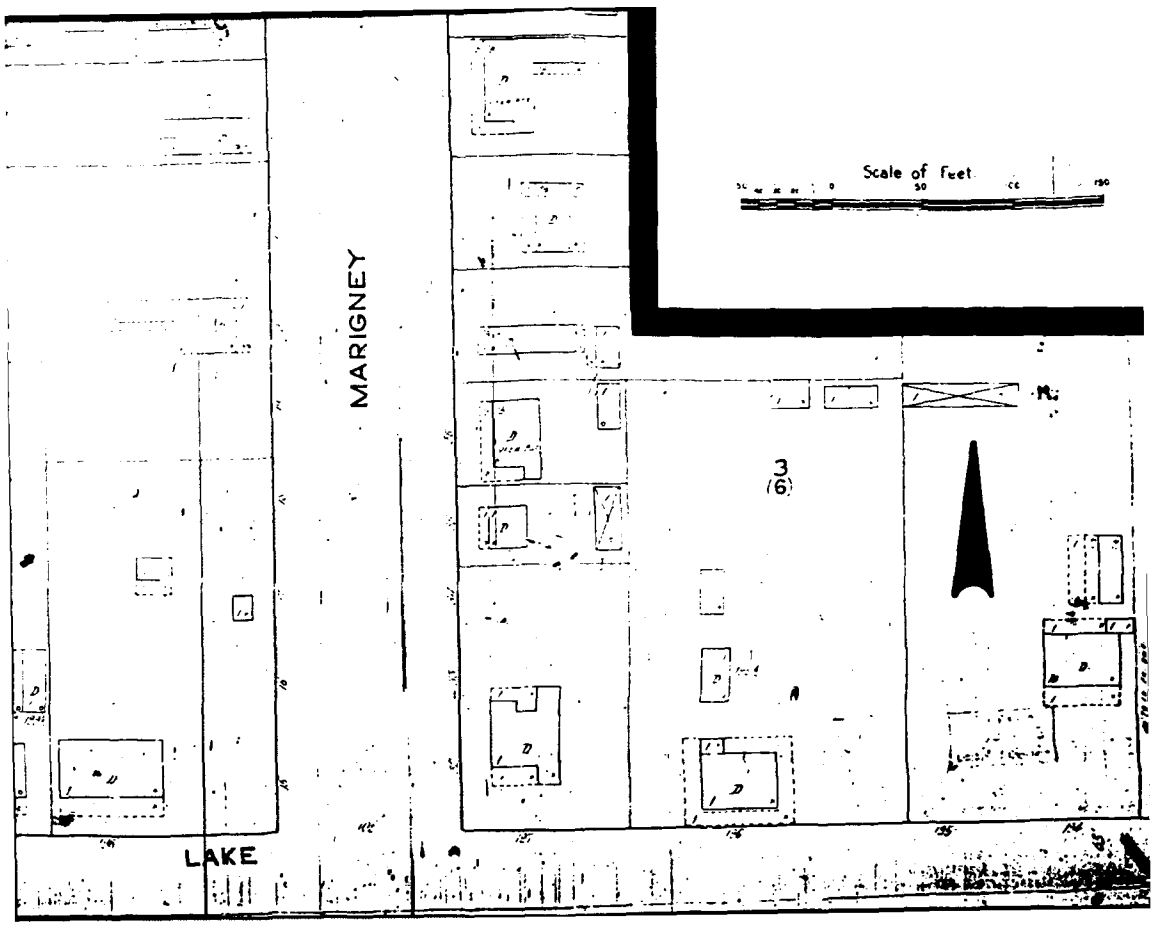
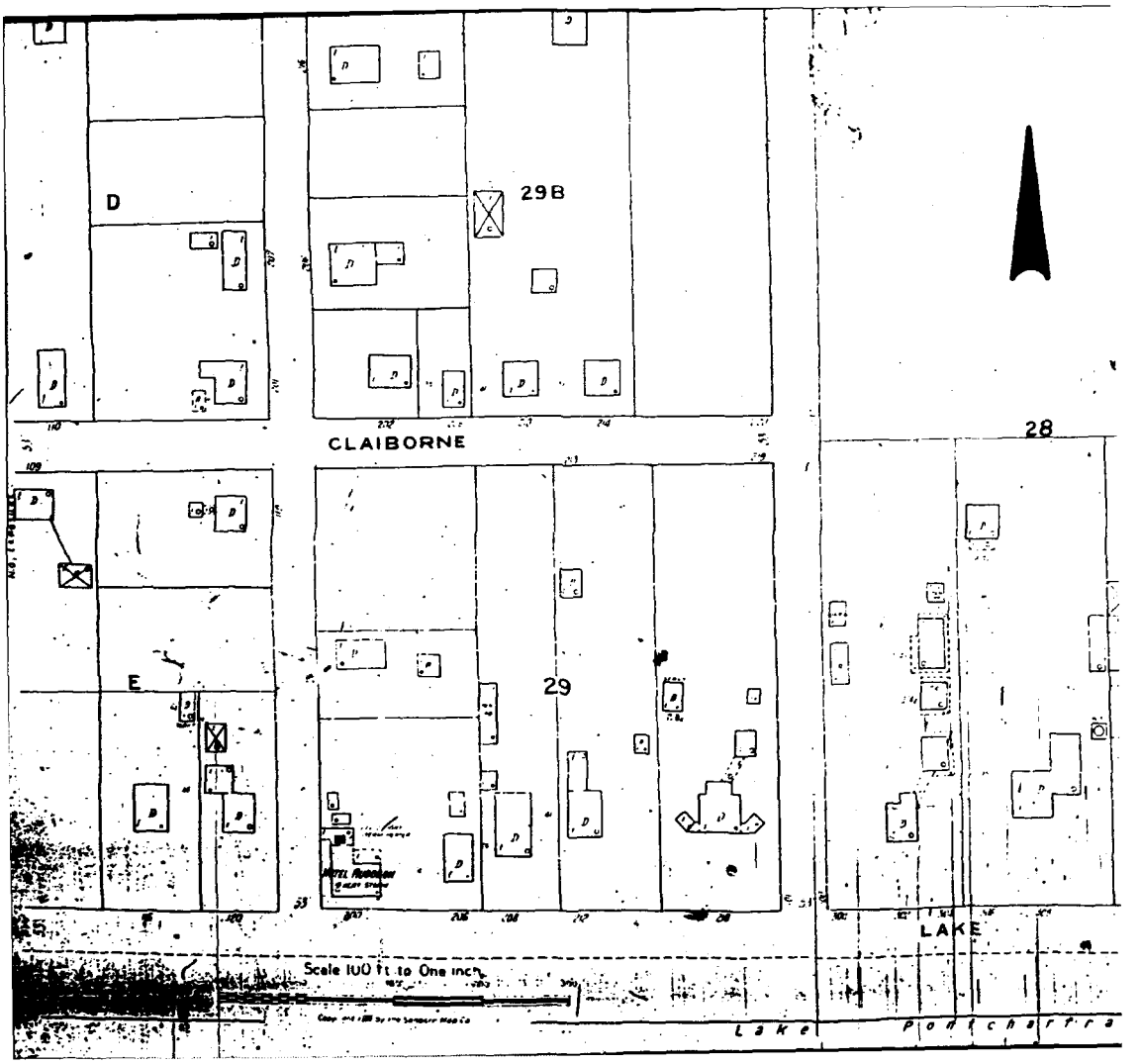
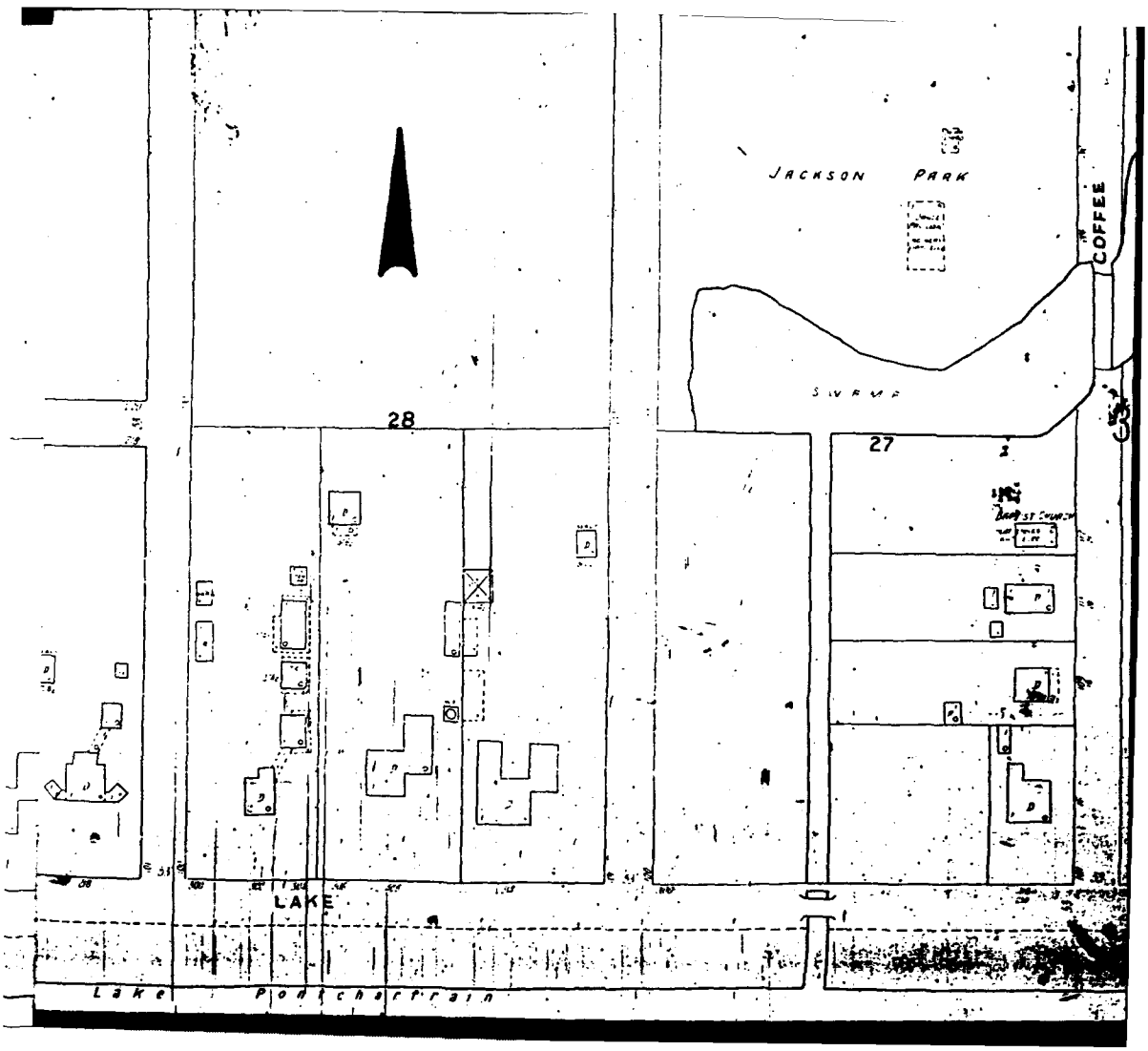
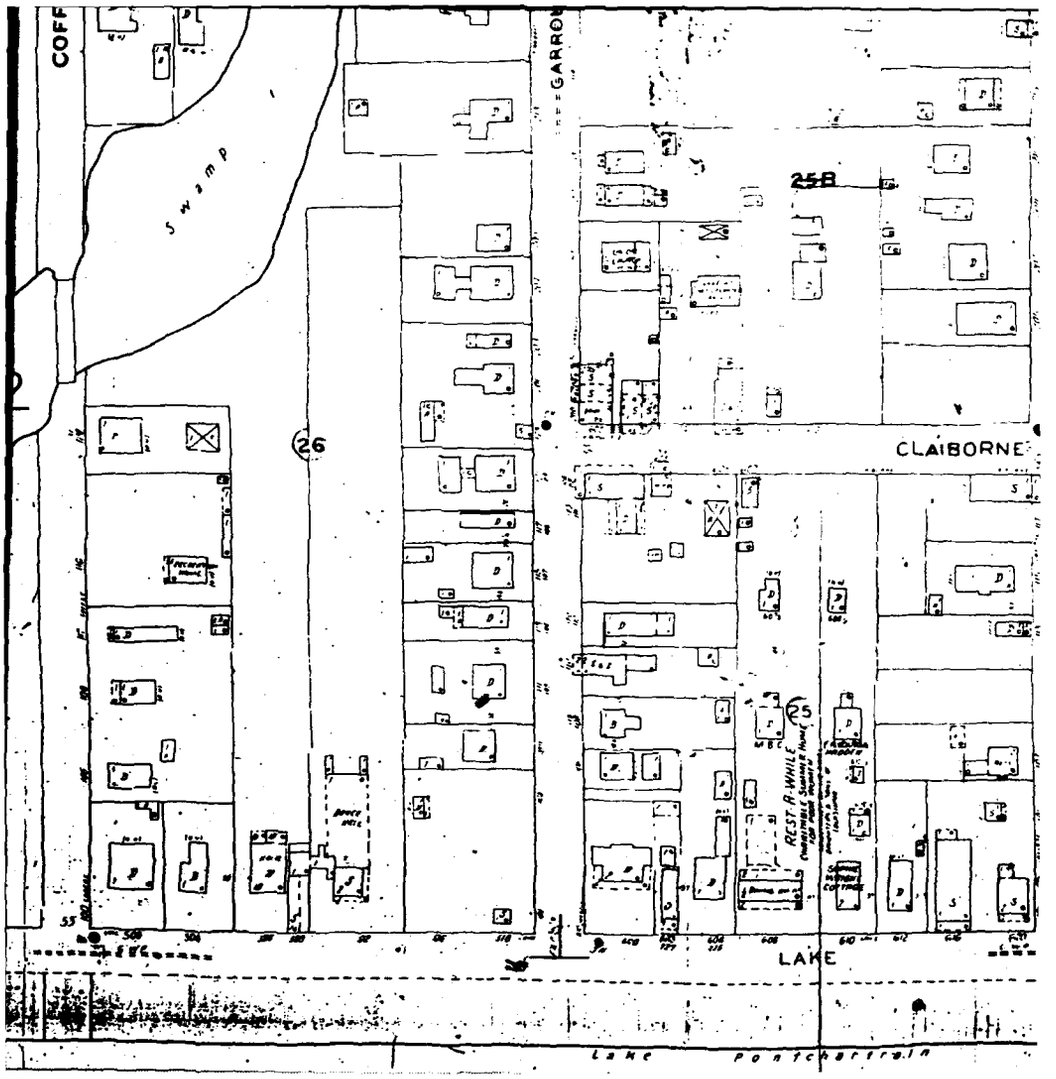
ur

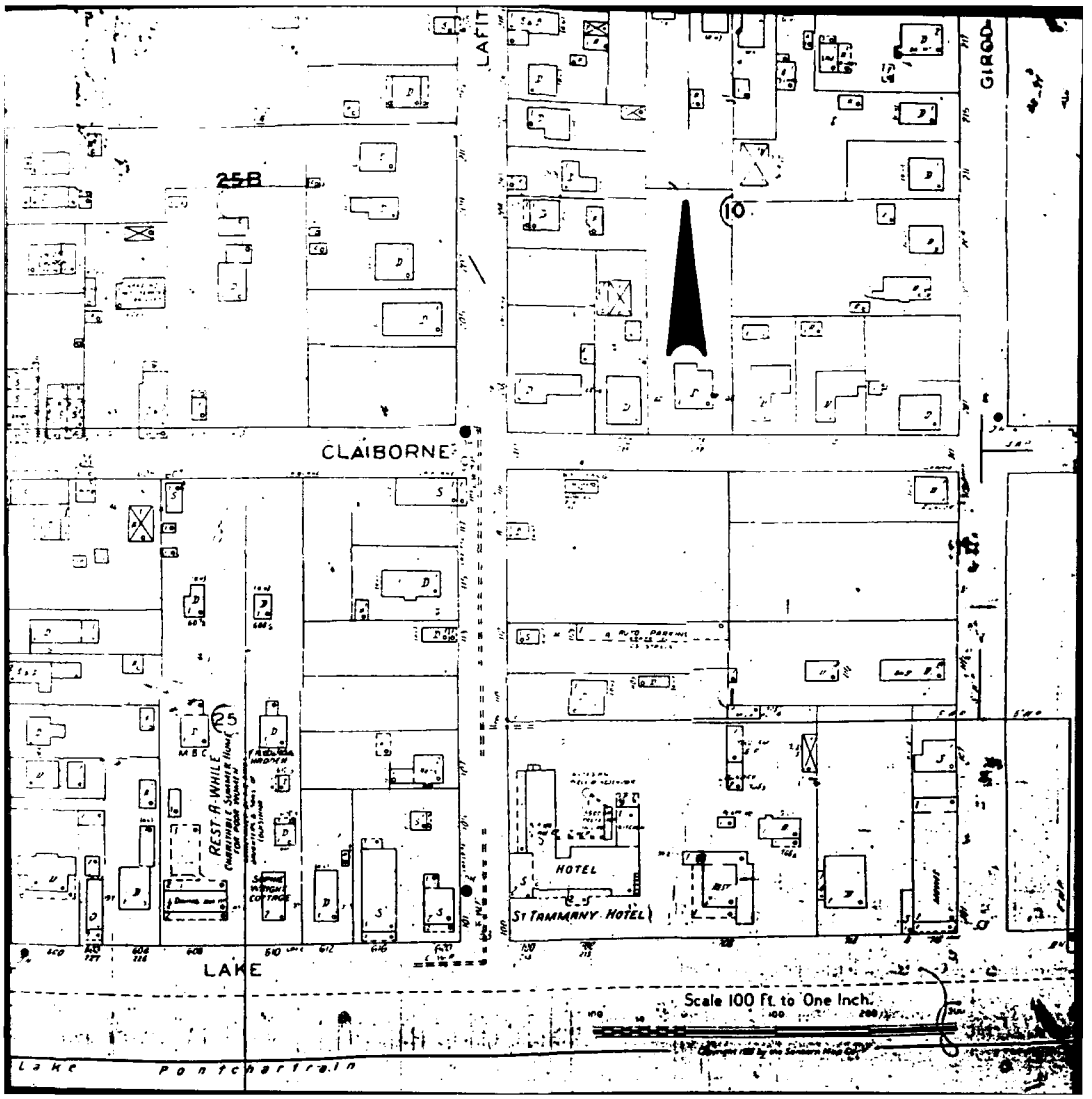

2
MARIGNEY
LAKE

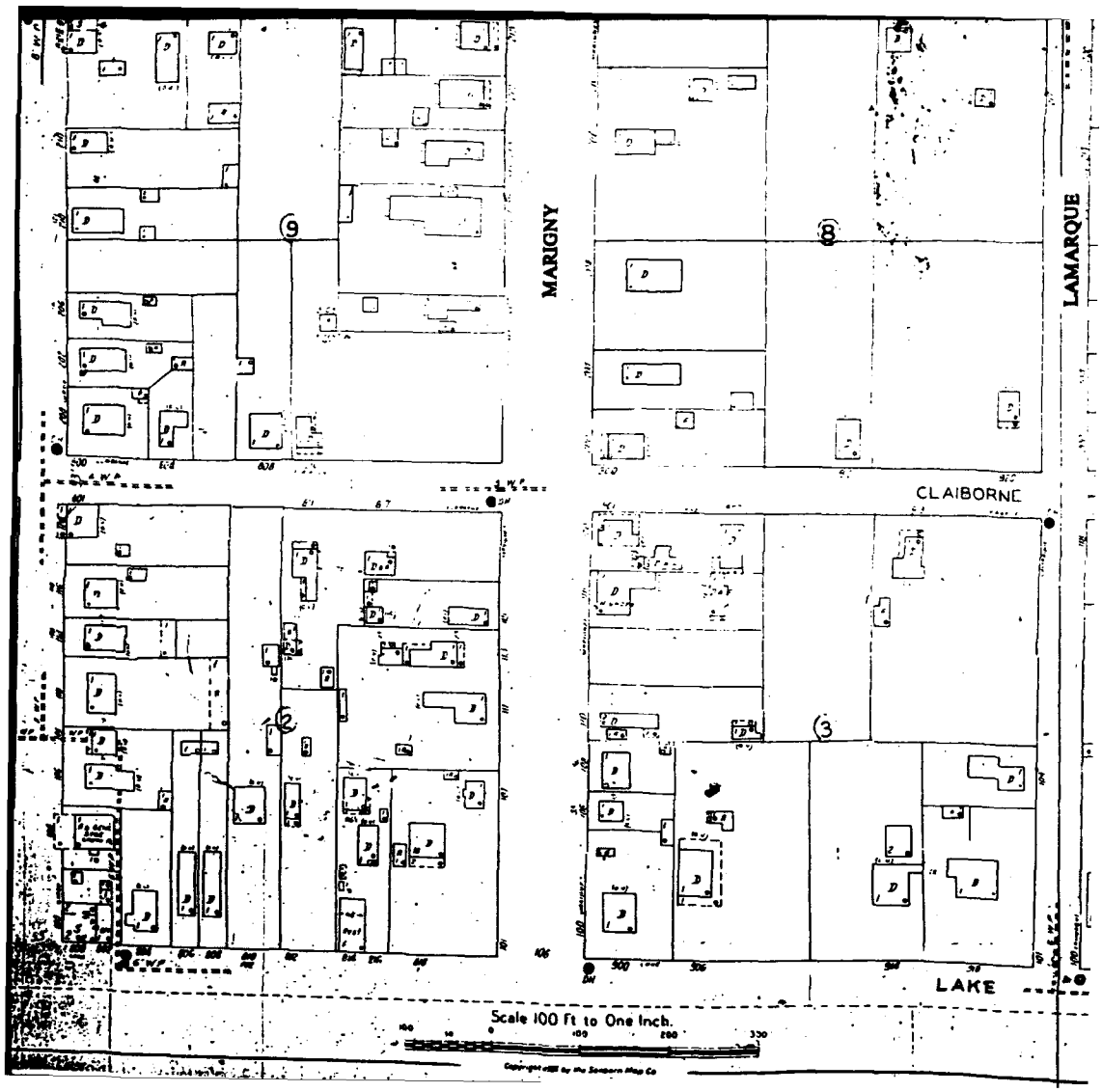

Scale of Feet
MARIGNEY
LAKE
3
(6)

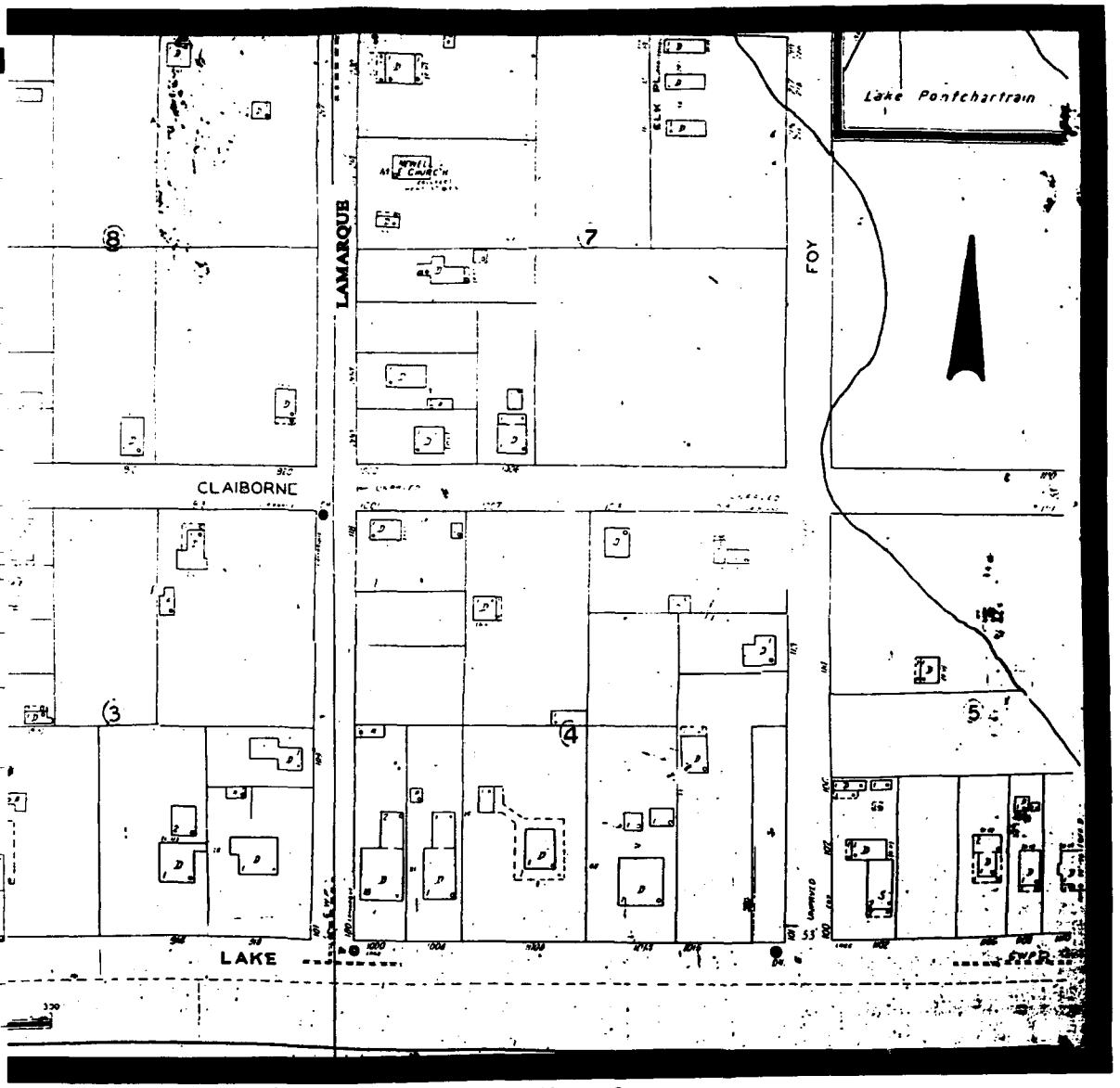

D
29B
CLAIBORNE
28
E
29
LAKE
Scale 100 ft. to One inch
Lake Pontchartrain


JACKSON PARK
COFFEE
SWAMP
28
27
LAKE
Lake Pontchartrain


COFF
GARRO
Swamp
25B
26
CLAIBORNE
25
REST-A-WHILE
LAKE
Lake Pontchartrain


LAFIT
GIROD
25B
10
CLAIBORNE
25
REST-A-WHILE
HOTEL
St TAMMANY HOTEL
LAKE
Scale 100 Ft. to One Inch.
Lake Pontchartrain


MARIGNY
LAMARQUE
CLAIBORNE
LAKE
9
8
12
3
Scale 100 Ft to One Inch.



Excerpt from the Sanborn Fire Insurance Map of

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archeological discovery. Debris from the late-nineteenth and early-twentieth-century construction episodes could remain in proximity to the heavily disturbed and backfilled area immediately adjacent to the present seawall. However, remnants of the wooden seawall are expected along an unnamed bayou (Chapter 6). Artifacts of any significance do not seem likely in the immediate impact area of the current project because of disturbance, fill, and the fact that it generally served as a beach.

CHAPTER 6
FIELD INVESTIGATION AND RESULTS

Introduction

This chapter presents the results of the 1993 field investigations along the lakeshore of the town of Mandeville in St. Tammany Parish, Louisiana. The purpose of these investigations was to determine whether any archeological resources were present in the proposed impact area for the replacement of the Mandeville Seawall. The study area extended from the westernmost end of Lakeshore Drive, which is one block west of West Beach Parkway, to 160 feet east of Little Bayou Castine (Figure 1). The area is bordered on the north by Lakeshore Drive and on the south by the present-day seawall which runs along Lake Pontchartrain.

Research Design

Initially, a surface examination of the project area was made. Artifact density was very light, and there was no indication of features such as piers or foundations. An initial literature search failed to provide any information to the effect that standing structures formerly stood in the area. Also, it was known that considerable amounts of fill were present, and that the area had been disturbed to an unknown depth. For these reasons, it was determined that backhoe excavations would be the most appropriate technique for the initial archeological survey.

Trench placement was based largely on the locations of historic structures north of Lakeshore Drive. The justification for this approach was that refuse disposal practices might have included disposal within the project area. Backhoe trenches were placed some distance from the present seawall for two reasons - safety and the likelihood of heavy disturbance and fill adjacent to the seawall. The research design also reserved at least one trench for the area next to an unnamed bayou where maps suggested that a portion of the wooden seawall might still be extant.

Pedestrian Reconnaissance and Surface Collection

On July 24, 1993, a two-member crew conducted a pedestrian reconnaissance and surface scan of the proposed construction corridor and the area between the corridor and Lakeshore Drive. Surface scatters were mapped and collected in order to determine the placement of backhoe trenches for subsurface testing.

Also, preliminary historical research was conducted. This included an examination of the Sanborn Fire Insurance Maps of 1904, 1909, 1915, and 1926, and conducting oral interviews with elderly residents. Historical photographs on exhibit in the Mandeville Town Hall also aided in the placement of the test trenches.

Four low-density surface scatters were observed and collected (Table 1). Their locations are shown on the site map (Figures 25 and 26). Scatter A consisted of a single sherd of non-diagnostic porcelain. Scatter B consisted of three sherds of post-1900 decaled porcelain. Scatter C consisted of a single sherd of post-1820 whiteware. Scatter D consisted of a single sherd of mid- to late-nineteenth-century classic ironstone.

Excavation of Trenches

On July 27 and 28, 1993, seven backhoe trenches were excavated at various intervals along the lakeshore. The selection factors for the location of each trench are provided in the discussion below. The excavation of each trench was monitored by two or three individuals. Stratigraphy, artifact recovery, and the location of possible structures or features were recorded. A field technician observed the dumping of each bucket of dirt while raking through it to recover artifacts. Only diagnostic artifacts were collected.

The strata of each trench were described according to Munsell color and soil type. Profiles were drawn for Trenches 2 through 7. The location of each trench is shown on Figures 25 and 26. The length of the trenches varied from 3.7 to 9.26 m and the depth varied from 1.2 to 2.2 m.

Trench 1

Trench 1 was placed parallel to Lakeshore Drive between Lafitte and Gerard Streets and in front of the present-day Bechac's Restaurant (Figure 26). This area was selected because it was a highly commercialized area according to historical accounts. A steamboat wharf was once located at the foot of Gerard Street. According to the Sanborn Fire Insurance Maps of 1904, 1909, and 1915, Mugnier's Hotel stood at the foot of Lafitte Street. In 1926, the St. Tammany Hotel was located in this same spot. A casino called Paul's Exchange is portrayed on the Sanborn map of 1904. That same building today houses Bechac's Restaurant. In 1904, there was a grocery on the west corner at the foot of Gerard Street. In 1909, this building was the Welcome Hotel and in 1915 it was the Mandeville Inn.

Table 1. List of Artifacts Recovered in the Study Area.

Surface

1 non-diagnostic porcelain sherd
3 post-1900 decalled porcelain sherds
1 post-1820 whiteware sherd
1 mid-to late nineteenth century classic ironstone sherd

Trench 1

1 olive glass sherd
1 twentieth-century clear liquor bottle top
2 twentieth-century wire nails
1 clear non-diagnostic glass sherd
1 sheet metal fragment
1 modern porcelaneous stoneware cup fragment
1 hinge strap

Trench 2

1 severely corroded nail

Trench 4

1 unidentifiable metal fragment
1 non-diagnostic porcelain sherd

Trenches 6 and 7

1 amorphous metal
badly decomposed wood associated with corroded nails

The uppermost stratum (0-0.24 m) in Trench 1 consisted of a 10YR 4/2 (dark grayish brown) silt mixed with a 10YR 6/4 (light yellowish brown) fine silty sand. Between 0.24 and 0.28 m was a very disturbed stratum of 10YR 6/6 (brownish yellow) sandy clay. Below 0.28 m and extending to 1.5 m was a 10YR 6/2 (light brownish gray) sandy clay with 10YR 5/6 (yellowish brown) mottling. This stratum was sterile below 0.7 m. At 1.6 m, there was more sand present. Between 1.8 and 2.0 m, the 10YR 5/6 (yellowish brown) sandy clay mottling diminished.

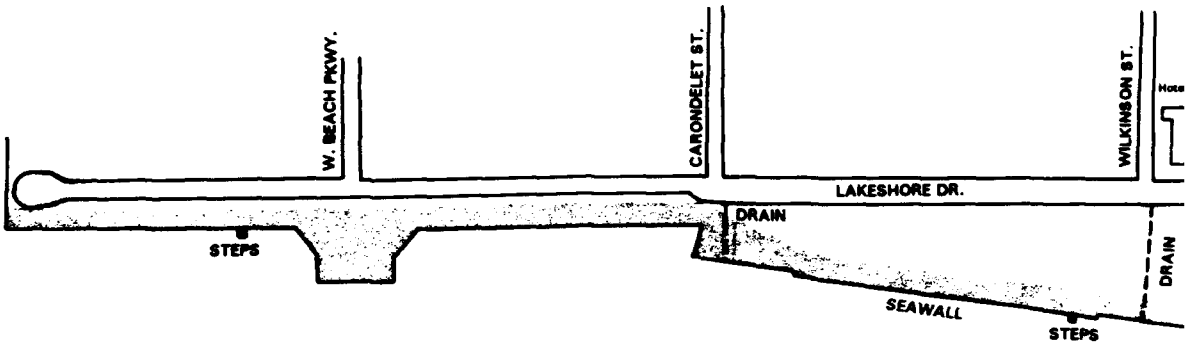
The width of Trench 1 was 0.7 m, and the overall length was 5.2 m. The depth varied from 0.52 m to 2.0 m below ground surface. Cultural debris occurred between 0 and 0.7 m below ground surface and consisted of concrete with gravel, small brick fragments, and oyster shell.

Few artifacts were diagnostic for the purpose of dating. A single piece of olive glass was present between 0 and 0.23 m. Between 0 and 0.52 m, a twentieth-century clear liquor bottle top, two twentieth-century wire nails, one piece of clear non-diagnostic glass, and one piece of sheet metal were present. A modern porcelaneous stoneware cup fragment was present between 0.5 and 0.7 m and a large hinge strap was present between 0.7 and 0.8 m.

Trench 2

Trench 2 was placed between Carroll and Lafitte Streets near the present-day seawall (Figure 26). The trench was oriented perpendicular to the seawall. This area was selected because the Sanborn Fire Insurance Map of 1915 portrays the Rest-A-While Charitable Summer Home for Poor Women on the north side of Lakeshore Drive. In ca. 1880, the Frappart House was established here, and it is now the property of the King's Daughters and Sons organization. The trench was oriented perpendicular to the seawall in order to find the original beachfront slope.

The upper stratum of Trench 2 consisted of a 10YR 3/2 (very dark grayish brown) silty sand which extended from 0-0.4 m below ground surface. From approximately 0.28 to 0.62 m, the soil was a 10YR 5/2 (grayish brown) silty clayey sand with 10YR 3/1 (very dark gray) mottling. At 0.32 m below ground surface and at 1.7 m from the north end of the trench, a 10YR 2/1 (black) charcoal-stained silty sand was observed. It extended to a depth of approximately 0.7 m at the south end of the trench. This stain sloped southward, and its maximum width was 0.14 m. Below the charcoal-stained sand was a sterile stratum consisting of a 10YR 6/2

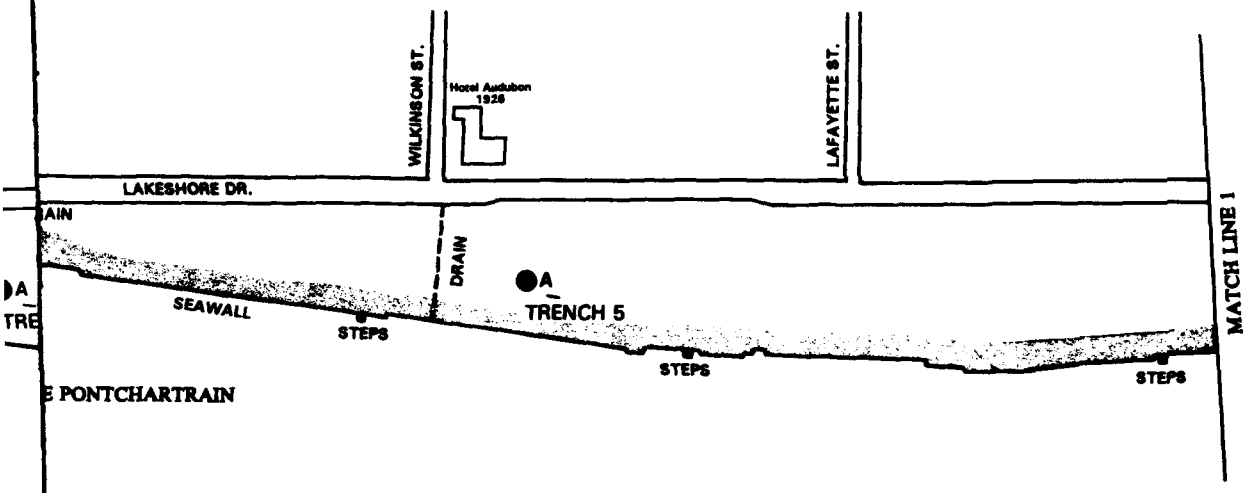


LAKE PONTCHARTRAIN

0 100 200 ft

0 20 40 60m

Figure 25. Project map of the lakeshor
(western section).



0 100 200 ft

0 20 40 60m

SURFACE SCATTER

PROPOSED IMPACT AREA

Project map of the lakeshore of Mandeville
tion).

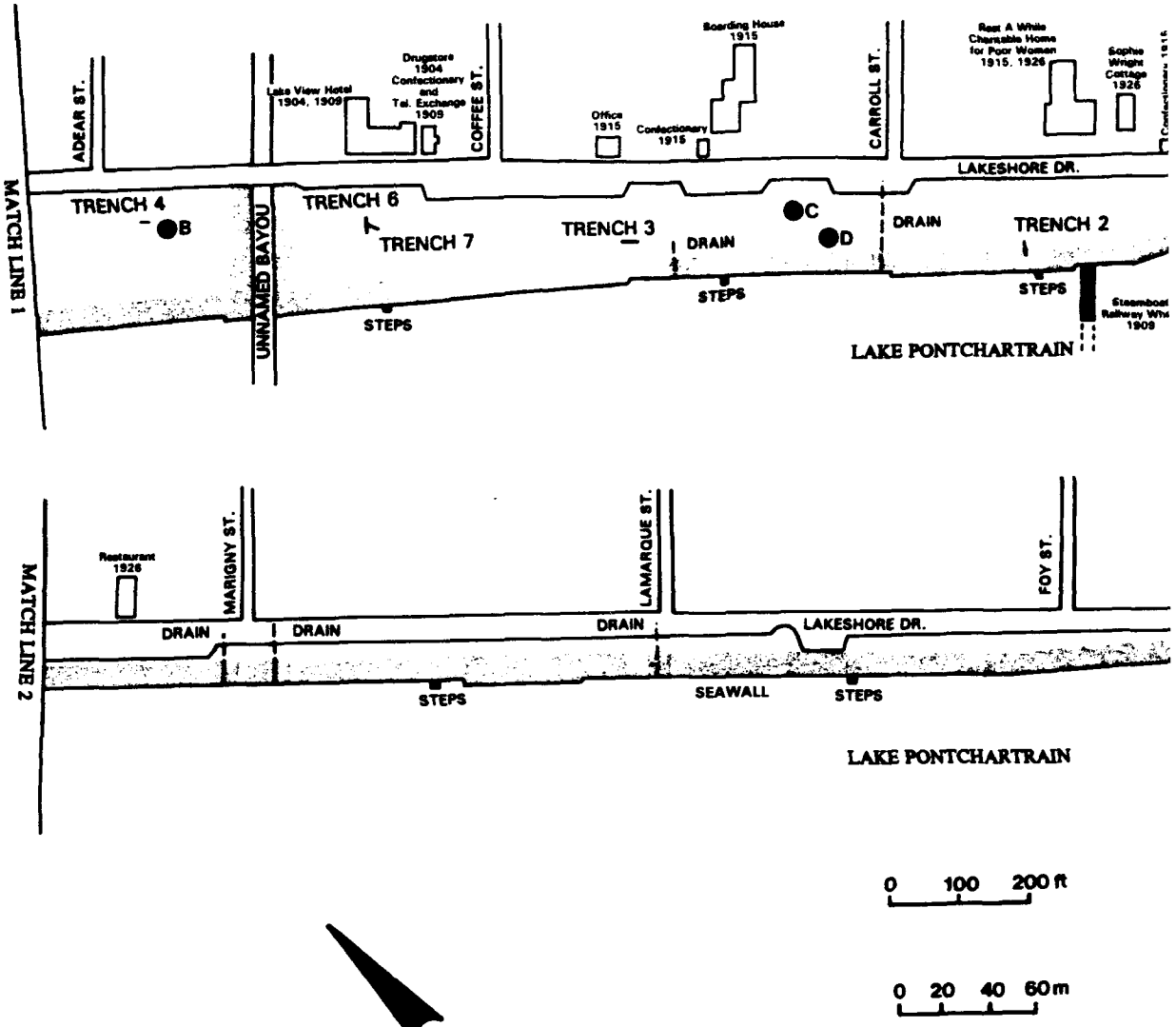
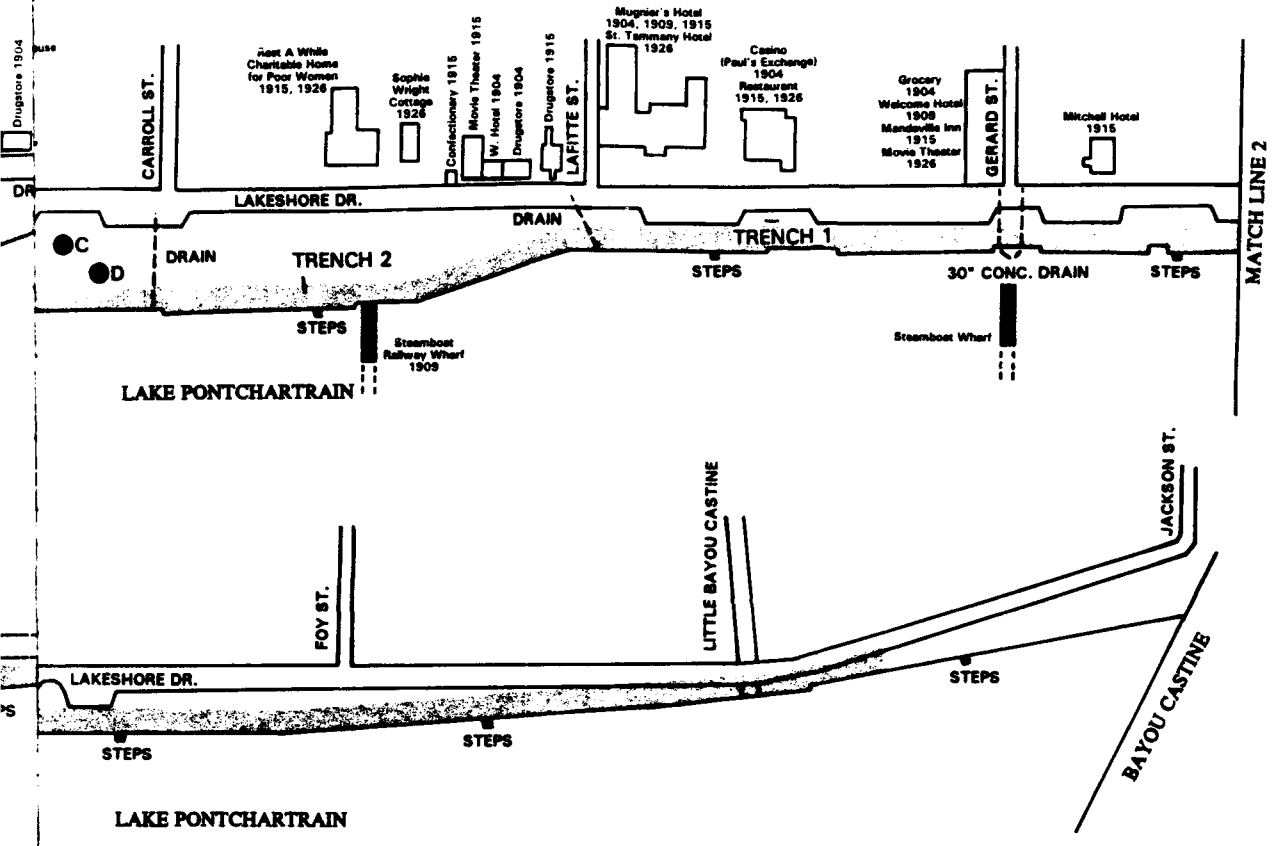


Figure 26. Project map of the lakeshor
(central and eastern sections).



0 100 200 ft

0 20 40 60 m

SURFACE SCATTER

PROPOSED IMPACT AREA

Project map of the lakeshore of Mandeville
d eastern sections).

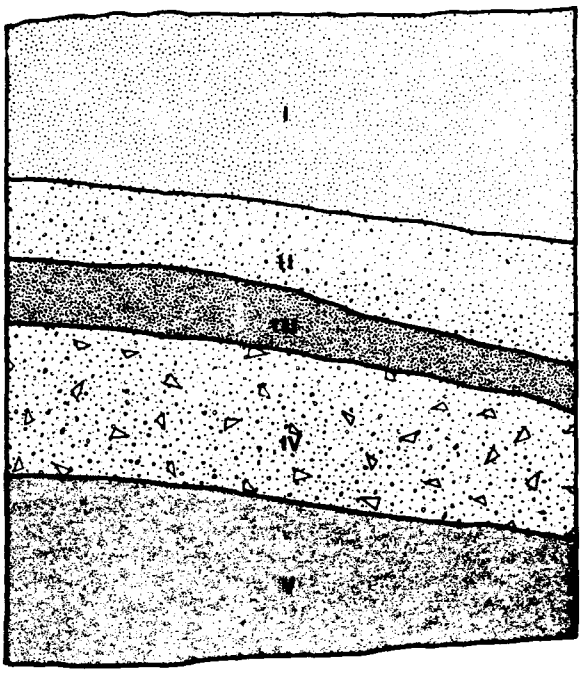
(light brownish gray) silty clay with 10YR 5/1 (gray) mottling which extended from approximately 0.46 to 0.94 m. The final stratum was a 10YR 6/2 (light brownish gray) silty sandy clay with 10YR 5/6 (yellowish brown) mottling which extended from approximately 0.7 to 1.38 m. The width of Trench 2 was 0.7 m and the overall length was 6 m. The maximum depth of the trench was 1.38 m. Gravel and *Rangia* shell were present throughout the three uppermost strata. Small pieces of decomposing wood associated with the charcoal-stained silty sand of the third stratum were also observed.

Figure 27 shows a one-meter profile of the east wall located 4 m south of the north end of the trench. In the profile, a definite slope can be seen from north to south, towards the lake. Strata III through V appear to represent the natural slope of the original beachfront. Because they contain cultural debris (gravel and *Rangia*) which can be associated with dredged soils, Strata I and II appear to be backfill used to level the ground during the original construction of the seawall or perhaps during renovations done by the Works Progress Administration. Strata IV and V were sterile. A single nail was present between 0.4 and 0.6 m below ground surface. Its condition was too deteriorated to allow a determination of its type.

Trench 3

Trench 3 was situated between Coffee and Carroll Streets near the present-day seawall (Figure 26). The trench was oriented parallel to the seawall. This area was selected for three reasons. First, this was the location of a railway line built in 1909 (Figure 28) by the St. Tammany and New Orleans Railways and Ferry Company (Chapter 5). Second, there were two surface scatters of ceramic sherds between this area and Lakeshore Drive. Scatter C consisted of a single sherd of whiteware and Scatter D consisted of a single sherd of ironstone. Finally, several large oak trees were present. Based on their size, it appears that this area had been undisturbed for some length of time.

The strata within Trench 3 varied according to various lengths excavated. In Lengths 1 and 2, 0 to 3.48 m from the east end of the trench, there was an upper cap of soil, Stratum I, which consisted of a 10YR 5/2 (grayish brown) silty sand located between 0 and 0.62 m below ground surface. In Length 1, from 0-2.5 m, there was a thin gravel lens between 0.63 and 0.65 m below ground surface. In Length 2, from 2.5-3.48 m, this same gravel lens was visible between 0.45 and 0.47 m below ground surface. Above and below the gravel lens, from 0.3 to 1.14 m, was Stratum II, a



KEY

I	10YR 3/2 (very dark grayish brown) silty sand
II	10YR 5/2 (grayish brown) silty clayey sand with 10YR 3/1 (very dark gray) mottling
III	10YR 2/1 (black) charcoal-stained silty sand
IV	10YR 6/2 (light brownish gray) silty clay with 10YR 5/1 (gray) mottling
V	10YR 6/2 (light brownish gray) silty sandy clay with 10YR 5/6 (yellowish brown) mottling

Figure 27. East profile of Trench 2.

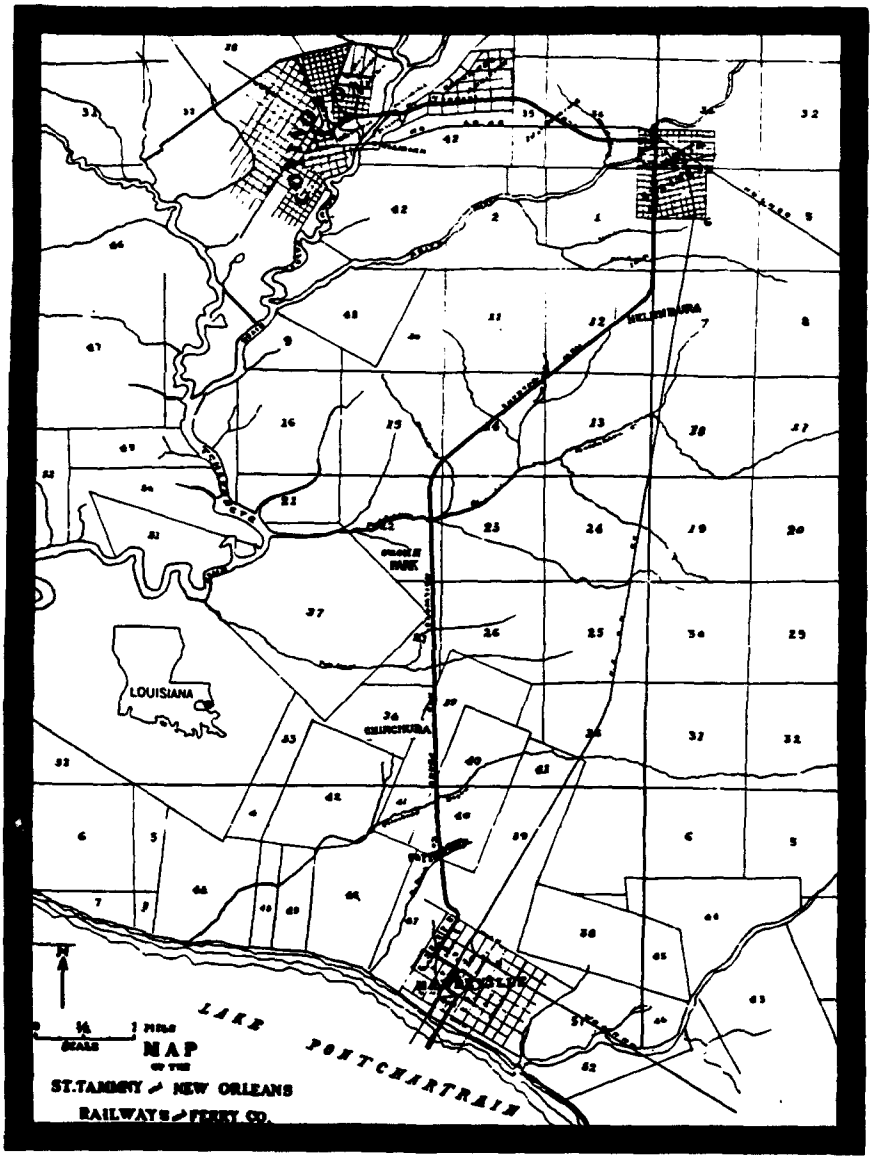


Figure 28. Map showing location of a railway line built in 1909 (from Hennick and Charlton 1962:125).

10YR 6/2 (light brownish gray) sandy silt with 10YR 5/6 (yellowish brown) mottling. These various strata are shown in the profile in Figure 29.

Within Stratum II there was a piece of wood at 0.75 m below surface. The wood was approximately 0.6 x 0.14 x m. It appeared to be a piece of driftwood. The water table was present at 1.1 m below ground surface.

In Lengths 3 through 6, from 3.48 to 9.26 m west of the east end of the trench, Stratum I diminished until it was no longer present. Stratum II was the most prominent soil, consisting of a 10YR 6/2 (light brownish gray) sandy silt with 10YR 5/6 (yellowish brown) mottling that extended from 0.1-1.52 m. At 1.52 m below surface, the water table was encountered. At this depth, the soil began to contain more sand and less clay.

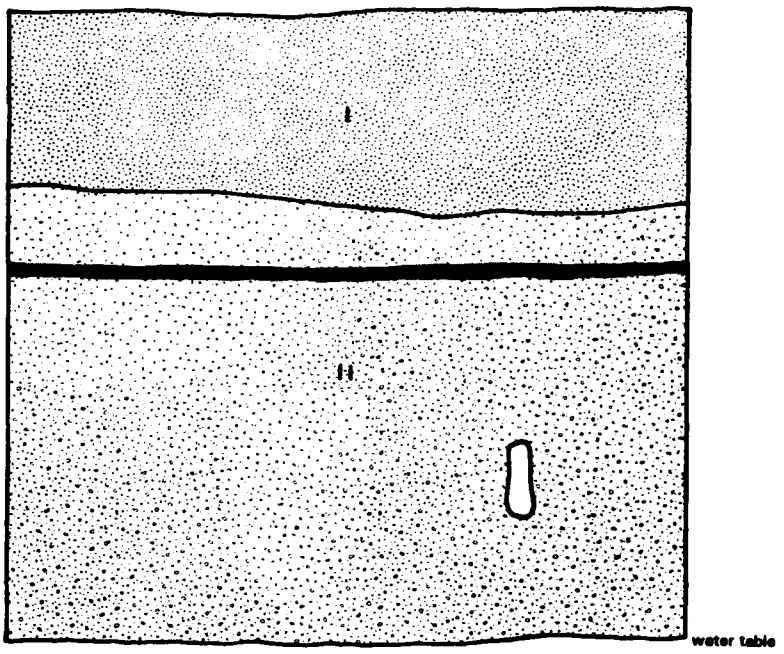
Cultural debris was present throughout Stratum I. It consisted of gravel and small pieces of *Rangia* shell. No artifacts were recovered from Trench 3. A pocket of clayey sand was noted in the south wall of the trench between 4 and 5.5 m. The pocket appeared to be backfill overlying Stratum II. It is possible that this was fill dredged from the lake in order to fill depressions in the original surface during the construction of the original concrete seawall.

Trench 4

Trench 4 was placed parallel to Lakeshore Drive west of the Unnamed Bayou (Figure 26). This area was selected because of the presence of three sherds of post-1900 decaled porcelain (Scatter B) and of large brick fragments at the base of the nearest oak tree.

The topsoil (Stratum I) of Trench 4 consisted of a 10YR 4/2 (dark grayish brown) sandy silt that extended from 0-0.1 m below ground surface. From 0.1-0.27 m, the soil was a 10YR 6/4 (light yellowish brown) sand with traces of a 10YR 4/2 (dark grayish brown) sandy silt. From 0.27-0.42 m, the soil was a 10YR 4/1 (dark gray) sandy silt. From 0.42 m to 1.86 m the soil was a 10YR 5/4 (yellowish brown) sandy silt with 10YR 5/6 (yellowish brown) mottling. From 1.86-2.1 m the soil was a 10YR 7/1 (light gray) sandy clay with slight traces of 10YR 5/6 (yellowish brown) mottling. A profile was drawn of the wall between 0.2-1.2 m west of the east end of the trench (Figure 30).

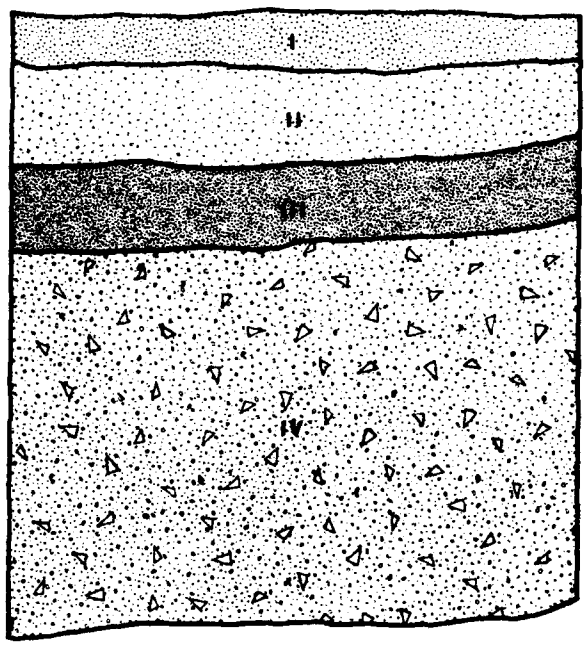
The width of Trench 4 was approximately 0.7 m and the total length was 5.6 m. The maximum depth was 2.1 m. Cultural debris consisting of a few pieces of gravel and



KEY

I	10YR 5/2 (grayish brown) silty sand
II	10YR 6/2 (light brownish gray) sandy clay with 10YR 5/6 (yellowish brown) mottling

Figure 29. South profile of Trench 3, Length 2.



KEY

I	10YR 4/2 (dark grayish brown) sandy silt
II	10YR 6/4 (light yellowish brown) sand with 10YR 4/2 (dark grayish brown) sandy silt
III	10YR 4/1 (dark gray) sandy silt
IV	10YR 5/4 (yellowish brown) sandy silt with 10YR 5/6 (yellowish brown) mottling

Figure 30. South profile of Trench 4.

Rangia shell was present in the top three strata. A single piece of unidentifiable metal was recovered at approximately 0.6 m below ground surface. A sherd of non-diagnostic porcelain was collected between 0 and 0.57 m below surface.

Trench 5

Trench 5 was placed parallel to the seawall near the foot of Wilkinson Street (Figure 25). This area was selected because a single sherd of porcelain (Scatter A) was recovered in the vicinity. According to the Sanborn Maps, this area was primarily residential except for the Hotel Audubon, which was located on the east corner of Wilkinson Street in 1926.

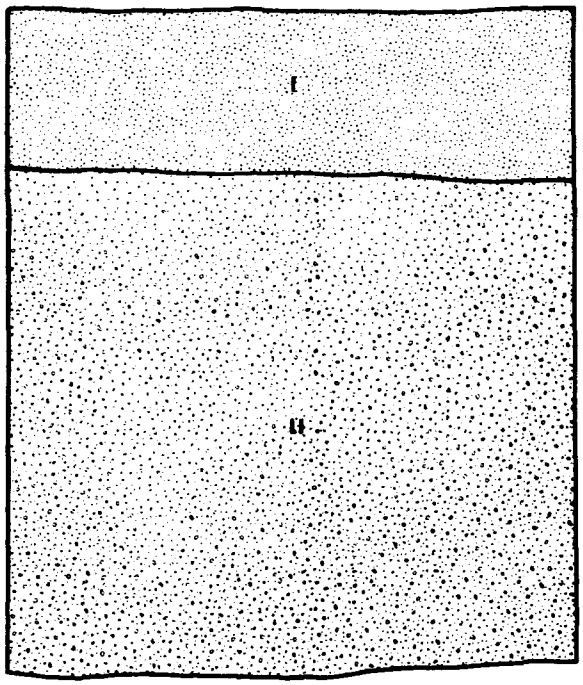
Stratum I (Figure 31) of Trench 5 consisted of a 10YR 3/2 (very dark grayish brown) sandy silt that extended from 0-0.3 m below ground surface. Stratum II was a 10YR 5/6 (yellowish brown) silty sand that extended from 0.3-1.8 m. Stratum 3, located between 1.18 m and 2.2 m, consisted of a 10YR 7/2 (light gray) moist compact sand with 10YR 5/6 (yellowish brown) mottling.

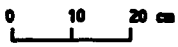
The width of Trench 5 was approximately 0.7 m, and the overall length was 5.6 m. The total depth was 2.2 m. Cultural debris consisting of gravel, *Rangia* shell, and a few small pieces of wood were present in Stratum I of Trench 5. The remainder of the trench was sterile.

Trench 6 and Trench 7

Trench 6 was placed east of the Unnamed Bayou perpendicular to Lakeshore Drive. According to the Works Progress Administration records for 1938 to 1940 construction (Scope of Services, Attachment 2) (Figure 32), part of the original wooden seawall once stood here. The Sanborn Fire Insurance Maps of 1904 and 1909 portray the Lake View Hotel, a confectionary, and a telephone exchange across the street from this area. The trench was oriented at 30°. The alignment of the trench was intended to intersect the bearing of the original seawall.

The topsoil in Trench 6 consisted of a 10YR 5/2 (grayish brown) silty sand that extended from 0 to approximately 0.2 m below ground surface. This level (Stratum I) appeared to represent disturbed fill containing *Rangia*. Stratum II was a mixture of a 10YR 6/2 (light brownish gray) sandy silty clay with pockets of 10YR 6/8 (brownish yellow) and 10YR 7/2 (light gray) sand located between 0.2 and 0.71 m. There was a thin lens of 10YR 6/6 (brownish yellow) clayey sand (Stratum III) present between





KEY

I	10YR 3/2 (very dark grayish brown) sandy silt
II	10YR 5/6 (yellowish brown) silty sand

Figure 31. South profile of Trench 5.

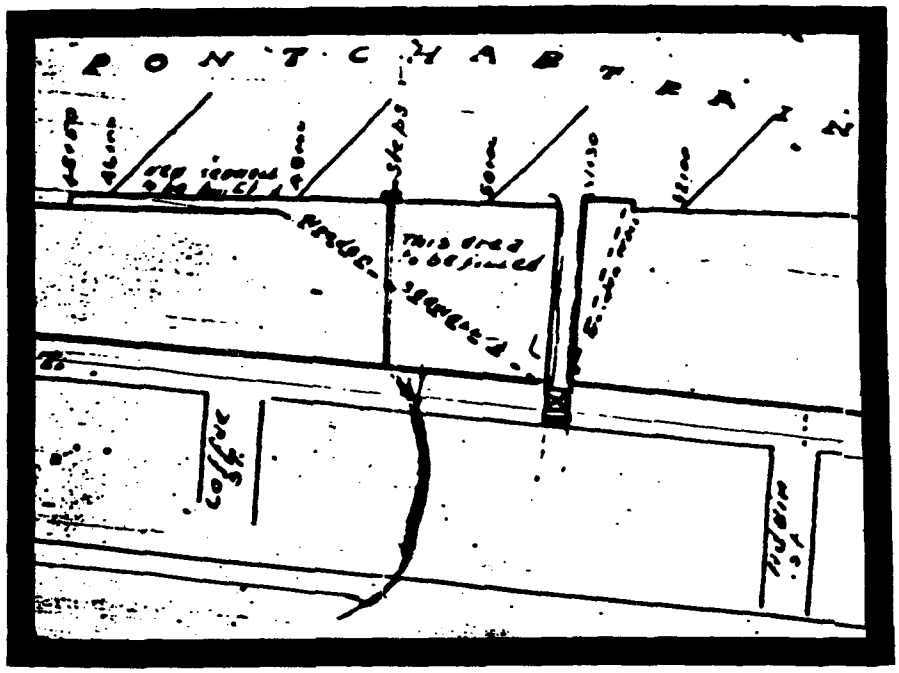


Figure 32. Works Progress Administration map for 1938 to 1940 construction (Scope of Services, Attachment 2).

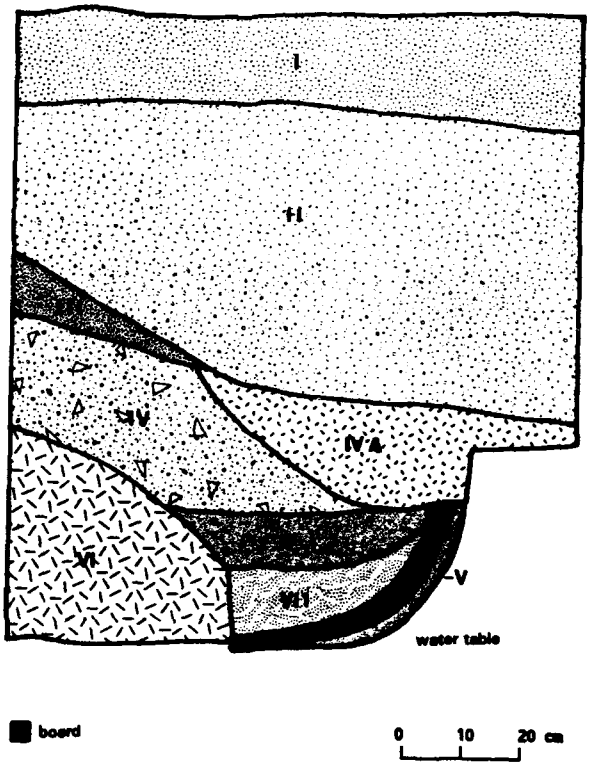
0.43 and 0.58 m. Stratum IV was present in Lengths 1 through 3, between 0 and 5.1 m south from the north end of the trench. This stratum was a 10YR 6/2 (light brownish gray) sand with pockets of clay. It contained gravel, grit, and *Rangia*. This stratum was present between 0.58 and 0.73 m below ground surface, at 0-4.5 m south from the north end of the trench. Between 4.5 m and 5.1 m south of the north end of the trench, there was a slope in this stratum down to 0.86 m below ground surface.

In Lengths 1 through 3, between 0 and 4.9 m south from the north end of the trench, there was a fourth stratum (Stratum VI in Figure 33). It consisted of a 5Y 7/1 (light gray) silty clay. This stratum was present from 0.73 m to 1.1 m below ground surface. Water table was encountered at 1.1 m.

During the excavation of Length 3, located between 4 and 5.3 m south from the north end of the trench, a stain appeared at 0.8 m below ground surface. At this point, backhoe excavation was halted and the stain was cleaned with a trowel. It appeared to be decomposed wood, but it had no definite shape. Excavation with the backhoe was resumed. At 1.09 m below ground surface, a board was uncovered in the south wall of the trench. Length 4 was then excavated between 5.3 and 7.2 m south from the north end of the trench.

During the excavation of Length 4, at approximately 1.18 m below ground surface, a stain appeared in the floor of the unit. It consisted of a 5Y 6/1 (light gray) silty sand with pockets of clay and organic flecking. This is designated as Stratum V in the Trench 6 east wall profile (Figure 33). Decomposed wood was noted in this stratum at 1.2 m below ground surface. This decomposed wood aligned with a warped plank of wood which was present in the east wall profile (Figure 34).

A floor plan (Figure 34) shows the decomposed wood. A profile was drawn of the wall between 4.5 and 5.5 m south from the north end of Trench 6. In the profile, several soil types were associated with the bent vertical plank. Stratum IVA was a 2.5Y 4/2 (grayish brown) slightly clayey sand with grit and gravel present from 0.61 to 0.86 m below ground surface. It lies above the plank. Stratum V was a 5Y 6/1 (light gray) silty sand with pockets of clay and organic flecking. This appeared to be a disturbed transitional soil between Stratum IVA and Stratum VII. Stratum VII consisted of 7.5YR 2/0 (black) decomposed matter containing pieces of wood. Stratum V appears to be undisturbed beneath the plank.



KEY

I	10YR 5/2 (grayish brown) silty sand topsoil
II	10YR 5/2 (grayish brown) silty sandy clay with pockets of 10YR 6/8 (brownish yellow) sand, 10YR 7/2 (light gray) sand, and 10YR 6/2 (light brownish gray) silty sandy clay
III	10YR 6/6 (brownish yellow) clayey sand lens
IV	10YR 6/2 (light yellowish gray) sand with pockets of clay; contains gravel and grit
IVA	2.5Y 4/2 (dark grayish brown) slightly silty sand with grit and gravel
V	5Y 6/1 (light gray/gray) silty sand with pockets of clay and organic flecks
VI	5Y 7/1 (light gray) silty clay
VII	7.5YR 2/0 (black) decomposed organic matter/board

Figure 33. East profile of Trench 6 between Lengths 3 and 4.

It appeared that the features in Trench 6 were the remains of a portion of the original wooden seawall. A decision was made to excavate another trench (Trench 7) oriented to follow the alignment of the features and the angle of the seawall as shown on the WPA map.

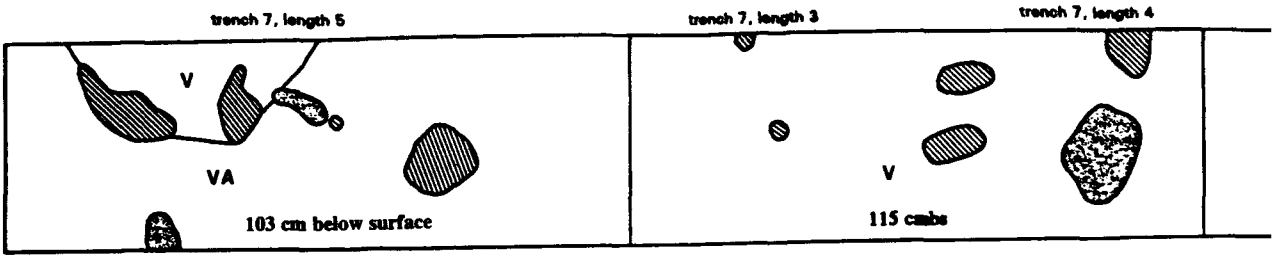
Trench 7 intersected Trench 6 at approximately 5.1 to 5.8 m south from the north end of Trench 6. As noted above, Trench 6 was oriented at 30°. Trench 7 was oriented at 331°.

During the excavation of Trench 7, an organic stain was noted at 0.36 m below ground surface and 1.1 to 1.17 m east of the intersection of Trenches 6 and 7. The stain was shallow and contained badly corroded nails. This stain did not appear to be associated with the decomposed boards or seawall uncovered in Trench 6. Those boards were located at a depth of 1.2 m below ground surface.

The soils in Trench 7 were identical to the Trench 6 soils (Figure 35). At 0.9 m below ground surface, a number of stains were noted in the floor of Lengths 1 and 2 between 0 and 3.2 m east from the west end of the trench. The stains were cleaned with a trowel, revealing a single rectangular piece of wood, a number of rectangular and amorphous concentrations of wood, and concentrations of organic matter. Stratum IVA, a 2.5Y 4/2 (grayish brown) slightly clayey sand with grit and gravel, was present immediately above and between the decomposed stains (Figure 34).

In Length 1, a single piece of light green glass was recovered at 0.85 m below ground surface, and three non-diagnostic nails were recovered during the cleaning of the stains at 0.9 m.

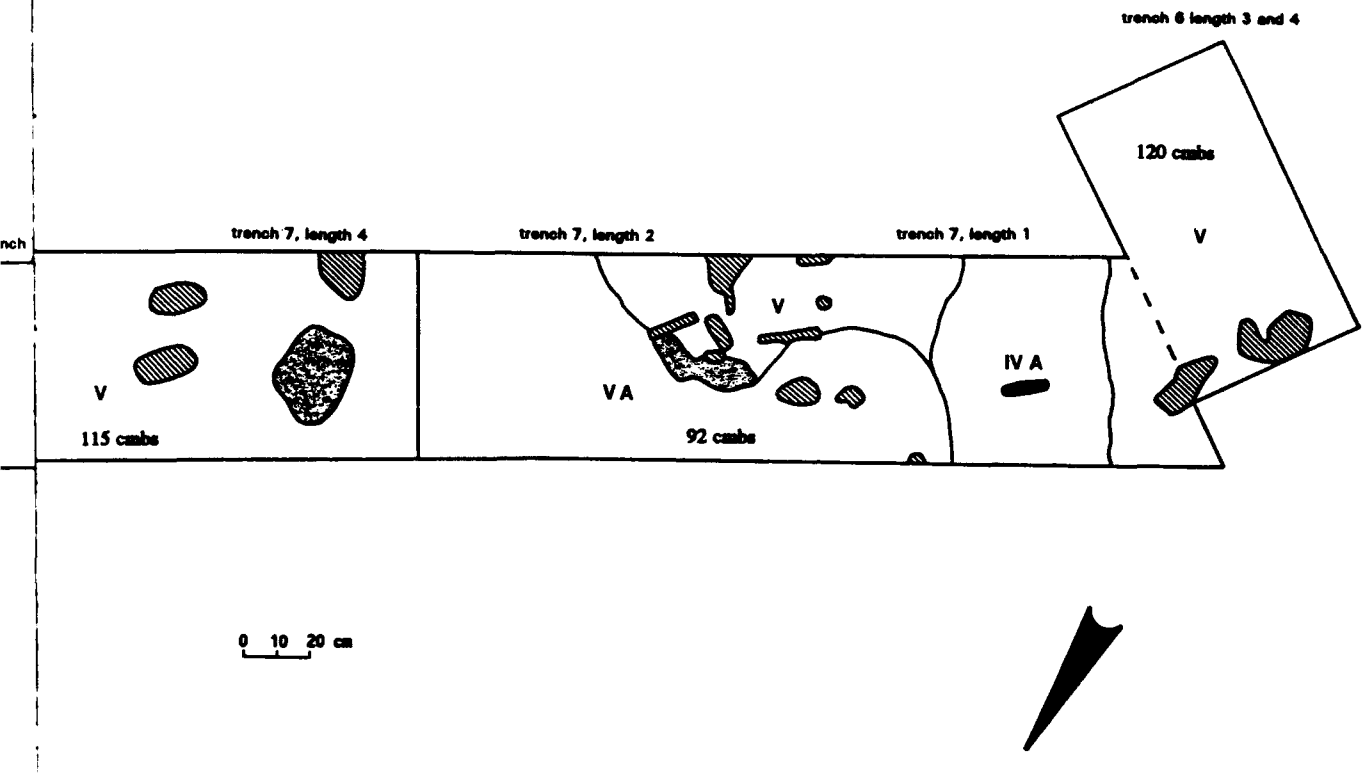
After planning and profiling, the excavation of Trench 7 continued. At 1.3 m below ground surface, the organic stains and decomposed wood were no longer present. Backhoeing continued with the excavation of Lengths 3, 4, and 5, which followed traces of organic stains. In Length 4, a single piece of amorphous metal was present at 0.2 m below ground surface. The stains were present in Lengths 3 and 4 at a depth of 1.15 m below ground surface an between 3.2 m and 5 m east from the west end of the trench. More stains were present in Length 5 at 1.03 m below ground surface and between 5 m and 7.3 m east of the west end of the trench. These stains were cleaned with a trowel which again revealed rectangular and amorphous concentrations of



KEY

IVA	2.5Y 4/2 (dark grayish brown) slightly clayey sand w
V	5Y 6/1 (light gray/gray) silty sand
VA	5Y 6/1 (light gray/gray) silty sand with 10YR 6/6 (br

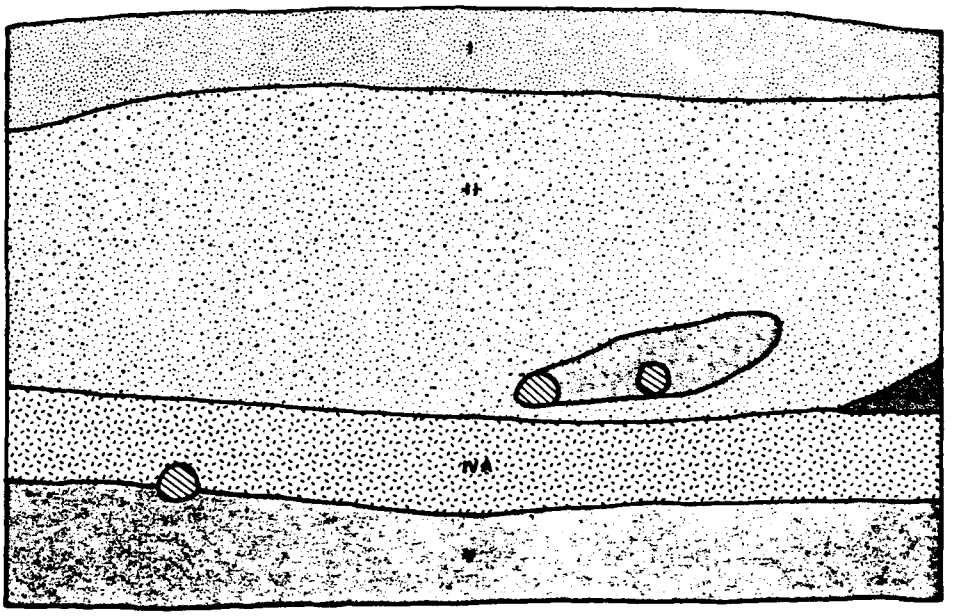
Figure 34. Plan view of Trench 7, Lengths
Trench 6, Lengths 3 and 4



KEY

2.5Y 4/2 (dark grayish brown) slightly clayey sand with grit and gravel
5Y 6/1 (light gray/gray) silty sand
5Y 6/1 (light gray/gray) silty sand with 10YR 6/6 (brownish yellow) sand

Plan view of Trench 7, Lengths 1 through 5 and
ngths 3 and 4



decomposed wood
organic matter

0 10 20 cm

KEY

I	10YR 5/2 (grayish brown) silty sand topsoil
II	10YR 5/2 (grayish brown) silty sandy clay with pockets of 10YR 6/8 (brownish yellow) sand, 10YR 7/2 (light gray) sand, and 10YR 6/2 (light brownish gray) silty sandy clay
III	10YR 6/6 (brownish yellow) clayey sand lens
IVA	2.5Y 4/2 (dark grayish brown) slightly clayey sand with grit and gravel
V	5Y 6/1 (light gray/gray) silty sand with pockets of clay and organic flecks

Figure 35. North profile of Trench 7, Length 1.

decomposed wood, as well as concentrations of organic matter.

The width of Trenches 6 and 7 was approximately 0.7 m. The total length of Trench 7 was 7.3 m and the maximum depth was 1.3 m. Figure 34 shows the alignment of the features found in Trenches 6 and 7. According to this alignment and the shape of the decomposed wood, it is apparent that the features uncovered represent the remains of a portion of the 1895 wooden seawall.

Strata Compared to Geomorphological Data

Chapter 2 of this report demonstrated that the upper surface of the Pleistocene Terrace should lie beneath variable amounts of recent alluvium, and that the depth would be determined by trench location. The deepest portion of Trench 1 was excavated to a depth of 2 m. However, undisturbed clay which should have represented the terrace at a depth of 1.3 m was not encountered.

Trench 2 was excavated to a depth of 1.38 m, while the Pleistocene Terrace was predicted to lie at a depth of 2.9 m. The mixtures of silt, sand, and clay with gravel and *Rangia* in this trench are consistent with interpretations of the soil as recent alluvium. Similar soils, also including shell and gravel, were encountered in Trench 3 which was excavated to a depth of 1.5 m when water table was encountered. The Pleistocene Terrace here was predicted to lie at a depth of 4 m. At the locations of Trenches 4, 6, and 7, the Pleistocene Terrace should be located at a depth of 4.6 m. Maximum depth of Trench 4 was 2.1 m, while maximum depth of Trenches 6 and 7 which contained remnants of the wooden seawall had a maximum depth of less than 2 m.

Figure 3 shows that in most portions of the study area the depth of the upper surface of the Pleistocene Terrace ranges from approximately 1.3 to 5 m. The only trench which should have reached the terrace was Trench 1 but it apparently failed to do so. Generally within the study area it would be necessary to excavate trenches to depths of 2 or more meters to uncover the terrace. The unconsolidated nature of much of the recent alluvium makes backhoe excavations to that depth unsafe.

CHAPTER 7
CONCLUSIONS AND RECOMMENDATIONS

The study reported in this volume focused on the beachfront area (south of Lakeshore Drive) between West Beach Parkway and Bayou Castine. Seven backhoe trenches were excavated. Only a very few artifacts were recovered, and most of these were non-diagnostic. Two of the trenches were placed at the suspected location of a portion of the 1895 wooden seawall. These trenches indicated that the seawall is in an advanced state of deterioration. The results of this study indicate that proposed construction will not impact significant archeological resources.

Only a few artifacts were recovered. Most of these were not diagnostic and most appear to date to the twentieth century. One of the trenches did uncover a portion of the 1895 seawall. However, it was in a severely deteriorated state, and consisted almost exclusively of soil stains. Also, there were no associated artifacts. Because the **Cultural Resources Code of Louisiana** discusses archeological sites in terms of artifacts and architectural features, no state site number was requested. Results of the study, then, indicate that the proposed replacement of the Mandeville Seawall will not impact significant archeological resources.

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APPENDIX I

Scope of Services

CELMN-PD-RN May 18, 1993

Scope of Services
Historical Research and Archeological Reconnaissance
of the Mandeville Seawall Replacement
St. Tammany Parish, Louisiana

1. Introduction. The purpose of the study is to determine if significant archeological resources are located within the potential impact area of the proposed replacement of the Mandeville Seawall. General information and a conceptual project plan are provided in the attached document entitled "Information Sheet for Mandeville Seawall Replacement" (attachment 1).

The seawall protects the historic town of Mandeville, Louisiana. During the 19th and early 20th centuries, Mandeville was a resort town frequented by New Orleanians for its beach, cool breezes and country surroundings. Between 1834 and 1936, numerous steamboats provided passenger service between Mandeville and New Orleans. During this period, many private piers and bathhouses, as well as three long wharves, extended from the lake shore into Lake Pontchartrain.

The first seawall in Mandeville was constructed of "heart pine" planks driven into the lake bottom, side-by-side, along the shoreline. This wall, or breakwater, was built in 1893-1895 and was later damaged by several storms. Between 1915 and 1921, the wooden seawall was replaced with a concrete wall built by the Town of Mandeville. This seawall extended 7000 feet across the lake front of the town.

During 1938-1940, the Works Progress Administration renovated sections of the seawall, replaced remnants of the wooden seawall with concrete piles, added forty concrete groins, constructed concrete curbs and subsurface drainage, constructed concrete sidewalks and steps, replaced wooden foot bridges with concrete bridges, and erected drinking fountains and other appurtenences. The stated purpose of the WPA work was to improve the bathing beach facilities and conveniences. A copy of WPA records associated with this work is attached (attachment 2). This was the last episode of seawall construction.

From historic photographs and maps, it appears that the original wooden seawall was built out in the lake. From the WPA records, it appears that the 1915-1921 concrete wall was constructed along, or lakeward, of the wooden seawall alignment. The WPA renovations and improvements were placed along the 1915-1921 alignment. From this chronology, it seems

probable that the majority of the area immediately adjoining the seawall is post-1921 fill and, therefore, unlikely to be of any archeological interest.

However, additional historical research and limited archeological testing is necessary to fully assess the potential for significant archeological deposits in the project right-of-way. Archeological deposits which may be located in the project impact area are remains of early settlement along the shore, 19th- and early 20th- century beach and wharf facilities, municipal dumps, and remnants of the original wooden seawall.

2. Study Area. The study area is shown on the maps entitled "Seawall Survey, City of Mandeville, St. Tammany Parish, Louisiana" in 8 sheets and dated December 15, 1991 (attachment 3). The historical research will include the entire area within the right of entry limits. This area extends from the centerline of Lakeshore Drive to 10 feet lakeside of the current seawall along its entire length. The archeological reconnaissance will focus on the area identified on the maps as the construction servitude. This is a narrower corridor which parallels the current seawall and is the likely construction impact area for the project.

3. General Nature of the Work. The study will consist of historical research, field reconnaissance, and data analysis and report preparation.

4. Study Requirements. The study will be conducted utilizing current professional standards and guidelines including, but not limited to:

- the National Park Service's draft standards entitled, "How to Apply the National Register Criteria for Evaluation," dated June 1, 1982;
- the Secretary of the Interior's Standards and Guidelines for Archeology and Historic Preservation as published in the Federal Register on September 29, 1983;
- Louisiana's Comprehensive Archeological Plan dated October 1, 1983; and

The study will be conducted in three phases: Historical Research, Field Reconnaissance, and Data Analysis and Report Preparation.

A. Phase 1: Historical Research. The study will begin with research of historical literature, maps and records necessary to establish the historic setting and predict the nature of the cultural resources in the study area. Historical research will include literature review, research of title records and review of other written, cartographic, photographic and aerial photography records sufficient to reconstruct the historic use of the study area. In addition to literature and record reviews, the Contractor shall consult individuals who are knowledgeable about the history of the study area.

At the conclusion of this phase, the Contractor shall submit for COR approval a brief letter report which describes the implementation of the field methods. This report shall include a copy of the project maps (attachment 3) with proposed subsurface test locations identified. The report will also address any recommended changes to the field methodology as described below and in the Contractor's proposal for this delivery order. Suggested modifications will be described and justified in detail.

B. Phase 2: Field Reconnaissance. Upon approval of the phase 1 report, the Contractor shall initiate the fieldwork in the study area.

Based on the size of the study area and the expectation that most (if not all) of the construction servitude consists of post-1921 fill, the most efficient means of testing for buried archeological deposits is through the use of a backhoe. Trenches will be excavated at locations where the historic research indicates the potential for buried archeological remains. Exhaustive trenching is not required. Rather, a sampling program shall be implemented.

If potentially significant archeological deposits are located in the trenches, the Contractor shall record the features or deposits through standard archeological techniques. The Contractor may expand the width of the trench, as necessary, to define or delineate the exposed feature or deposits. Extensive site testing methods, such as hand excavation of units, is not required.

At a minimum, site maps will show features and artifact scatters, locations of all subsurface testing units, and prominent natural and cultural features in the site area. Although x,y coordinates or tie-ins to benchmarks are not required, all site maps will contain adequate information to tie site locations to permanent landmarks in the study area. All excavation units will be immediately backfilled upon completion of archeological recordation.

For all sites discovered during the survey, the Contractor will file state site forms with the Louisiana State Archeologist and cite the resulting state-assigned site numbers in all draft and final reports. In addition, the Contractor will submit site update forms to the State Archeologist for all previously recorded sites. These forms will correct previously filed information where appropriate and summarize the results of the present investigation. All sites located within the survey area will be recorded to scale on the appropriate 7.5 minute quadrangle maps. The quadrangle maps will be utilized to illustrate the site forms. One copy of each site and site update form will be submitted to the COR with the draft report.

C. Phase 3: Data Analyses and Report Preparation. All data will be analyzed using currently acceptable scientific methodology. The Contractor shall catalog all artifacts, samples, specimens, photographs, drawings, etc., utilizing the format currently employed by the Louisiana State Archeologist. The catalog system will include site and provenience designations.

All cultural resources located by the survey will be evaluated against the National Register criteria contained in Title 36 CFR Part 60.4 to assess their potential eligibility for inclusion in the National Register. The Contractor will classify each site as either eligible for inclusion in the National Register, potentially eligible, or not eligible. The Contractor shall fully support his recommendations regarding site significance. For those sites considered worthy of additional testing, the Contractor will provide a specific and detailed testing plan. This plan will include field and laboratory methods, as well as appropriate research questions. The Contractor shall also recommend detailed mitigation measures for all sites classified as eligible.

If the Contractor believes that additional survey or subsurface testing of the project area is necessary to locate significant archeological deposits, he will recommend such additional fieldwork. This recommendation will be fully supported by the historical research and the results of the archeological reconnaissance performed during this study.

The analyses will be fully documented. Methodologies and assumptions employed will be explained and justified. Inferential statements and conclusions will be supported by statistics where possible. Additional requirements for the draft report are contained in Section 5. of this Scope of Services.

5. Reports.

a. Phase 1 Letter Report. One copy of the phase 1 letter report will be provided to the COR within 4 weeks of delivery order award. Any problems with the report will be resolved by the COR within 1 week of its receipt.

b. Phases 1-3 Draft Report. Six copies of the draft report integrating all phases of this investigation will be submitted to the COR for review and comment within 12 weeks after delivery order award. Along with the draft reports, the Contractor shall submit:

(1) One copy of the project maps marked with the locations of all sites and standing structures in the survey area;

(2) one copy of each site, site update, and standing structure form;

(3) three copies of the National Register Registration Forms for each site recommended as eligible for inclusion in the National Register. This documentation will contain all of the data required by NPS National Register Bulletin 16: Guidelines for Completing National Register of Historic Places Forms.

The written report shall follow the format set forth in MIL-STD-847A with the following exceptions: (1) separate, soft, durable, wrap-around covers will be used instead of self covers; (2) page size shall be 8-1/2 x 11 inches with 1-inch margins; (3) the reference format of American Antiquity will be used; and (4) alphanumeric page numbering will begin with the first page of the introductory section. Spelling shall be in accordance with the U.S. Government Printing Office Style Manual dated January 1973.

c. Phases 1-3 Final Report. The COR will provide all review comments to the Contractor within 8 weeks after receipt of the draft reports (20 weeks after work item award). Upon receipt of the review comments on the draft report, the Contractor shall incorporate or resolve all comments and submit one preliminary copy of the final report to the COR within 4 weeks (24 weeks after work item award). Upon approval of the preliminary final report by the COR (within 1 week after submittal), the Contractor will submit 30 copies and one reproducible master copy of the final report to the COR within 27 weeks after work item award. The Contractor will also provide computer disk(s) of the text of the final report in Microsoft Word or other approved format.

Included as an appendix to the Final Report will be a complete and accurate listing of cultural material and associated documentation recovered and/or generated. In order to preclude vandalism, the final report shall not contain specific locations of archeological sites. Site specific information, including one set of project maps accurately delineating site locations, site forms, black and white photographs and maps, shall be included in an appendix separate from the main report.

6. Attachments:

1. Information Packet for Mandeville Seawall
2. WPA Records for 1938-1940 Construction
3. Seawall Survey, City of Mandeville, St. Tammany Parish, Louisiana. 8 Sheets. December 15, 1991

APPENDIX II

Personnel

APPENDIX II

Personnel

Dr. Jill-Karen Yakubik served as Principal Investigator for this project. Dr. Herschel A. Franks served as Project Manager. Ms. Maria Tavaszi served as Field Archeologist. Benjamin Maygarden served as Historian. Ms. Tara Bond served as Archeological Technician.